CHARING CROSS HOSPITAL MEDICAL SCHOOL LIBRARY

THE

DUBLIN QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

MAY 1, 1862.

PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*On the Employment of a Heated Thermometer for the Measurement of the Cooling Power of the Air on the Human Body.* By JONATHAN OSBORNE, M.D., King's Professor of Materia Medica; &c., &c.

> Ταράσσει τους ἀνθρώπους ὀυ τὰ πράγματα ἀλλὰ τὰ περὶ τῶν πραγμάτων δόγματα.—EPICTETUS, 5.

PHYSICIANS often anxiously examine meteorological tables in order to ascertain the localities best suited to their patients. There is no want of such tables; and many of them constructed with great care and elaboration. Within late years we have not only observations thermometric and barometric, with their highest and lowest daily readings, but those of the wet and dry bulb-thermometer, in order to supply us with data for estimating the amount of moisture in the air; and, in the more extensive establishments, the anemometers and rain gauges appear to complete the entire collection of facts respecting the state of the atmosphere, according to our present mode of observing.

When, however, we wish to learn from such tables the state of localities with reference to their actual influence on the human body, we encounter a deficiency which all have experienced, and which is often attempted to be supplied by an appeal to popular observation, and by resorting to the sensation of hot and cold, possessed in common by the most barbarous as well as the most civilised classes of mankind. Thus, in some localities with a high thermometric temperature, we are informed that invalids complain of the cold; and in others, where the thermometer proclaims it to be cold, the inhabitants find it to be warm. Vague and inaccurate as these popular statements must be, yet, without them, no just estimate of climate can be formed. Within a short period a highly respectable physician brought forward his thermometric observations as an irrefragable testimony of the mild and genial climate of a certain place on the western coast of Ireland, where even the trees are stunted in their growth by the constant wind blowing from the Atlantic. One such example of this kind is surely a sufficient proof that up to the present time we are more dependent on our feelings of cold and heat, imperfect though they may be, than on any meteorological observations hitherto made, and that they are required to enable us to form a judgment as to the cooling or heating qualities of the air.

Several years ago, under a deep conviction that our thermometric observations, as hitherto conducted, were inadequate to instruct the physician in what he most desires to know respecting climate, I brought before the British Association, at their first meeting in Dublin, a proposal for using a heated thermometer. This was accompanied by several illustrations of the behaviour of such an instrument under various circumstances, in order to prove its applicability to every condition of climate or locality. The eminent persons at that time assembled in the section expressed their approbation, and three committees were appointed, viz., one in London, one in Edinburgh, and one in Dublin, to investigate the subject. However, as I did not feel called upon to bestow more labour on a subject which ought to have no more interest for me than for others, it has continued to be neglected up to the present time. Some years later, when the meteorological survey of Ireland was undertaken, under the auspices of the Royal Irish Academy, I suggested that observations with the heated thermometer should be included among those to be made at the various stations. It was recommended by some members of the committee, whose names, were I to mention them, would at once

enlist the confidence of the scientific world in its favour; but it was considered by the majority to require too much trouble on the part of the observers, and was consequently abandoned.

Since its first introduction I have never yet been shaken in my opinion of its value; and have subsequently made some changes in order to render its use more intelligible, and, at the same time, to facilitate its application to various practical purposes. The great object has been to render the all-important agencies of heat, and cold, and climate, subject to actual measurement, so that they may be entirely, and without any exception or reserve, dealt with like any of the other appliances of medical science.

The principle on which the use of the heated thermometer depends is easy to be understood. The bulb being heated up to 90° Far. represents the heat of the surface of the human body; when in this state it is exposed to a cooler medium—whether air, or water, or mixture of both, as moist air—and allowed to cool to 80° Far.; the time required for cooling these 10 degrees represents (inversely) the cooling power exerted by that medium, whatever it may be, or however applied. This cooling power is derived from other agencies besides difference of temperature—as from radiation of the neighbouring objects, conducting power of the surrounding medium, and more especially from currents causing various proportions of it to be brought into contact with the heated body within a given time. Now these agencies have their combined results exhibited in the degree of rapidity with which the cooling is effected. Placed, as we are, in a medium, with few exceptions, always below 80°, we are constantly undergoing a process of cooling. In our ordinary clothing we feel just comfortable at 56° in-doors; but when exposed to a current of air, even at the same temperature, we feel cold in proportion to the force of the current, or in proportion to the conducting power imparted to it by increased moisture. Both these are agencies of which the thermometer takes no notice. Its indications are furnished by the contractions or expansions of a fluid, whether mercury or spirit, which always maintains the same temperature as the surrounding medium, and accommodates itself to these changes by altering its own density in the same proportion. The living animal, on the contrary, as always maintaining a temperature of its own, and as constantly resisting cooling agencies, is not to be considered as passively submitting, like the fluid of the thermometer in its ordinary state. When heated to 90° Far.—that being nearly the temperature of the surface of our bodies—in the rapidity with which

it is cooled, depending on the intensity of the cooling influences, it furnishes an index to their combined effect. It does not depict the force of any one of the cooling influences taken singly, but gives the sum of them all acting simultaneously.

This accomplishes the great desideratum of rendering the thermometer practically useful. As the instrument thus heated becomes the representative of the heat at the surface of the human body; and the rapidity with which it is cooled represents the energy of the cooling forces; I venture to propose that, under this adaptation, it should be called the *animal-heat thermometer*. The less the number of seconds in which it cools, the greater is the cooling power, and *vice versâ;* so that the greatest warmth is expressed by the greatest number of seconds required for cooling down a given number of degrees. The thermometer for this purpose is to be graduated only from 90° to 80° Far. At each observation it must be heated up to 90°. This may be done by immersing the bulb in warm water; after which it must be wiped. Or it may be heated in its tin case over a spirit lamp. Another mode of heating it, which appears very unscientific, but is very convenient when out of doors, is to hold the bulb of the thermometer close to the neck of the observer, inside his shirt collar, for two or three minutes, when it may always be heated to the required temperature, or even a few degrees above it.

For the *animal-heat thermometer*, the number of seconds during which it cools these 10° forms the scale of measurement. The number one commences when the instrument is plunged into water at, or nearly at, freezing point; and for the other end of the scale, when in calm air, at temperatures approaching 80° Far., the number of seconds will amount to several hundred. At these high temperatures it would be most convenient, and even become necessary, to take only the five degrees from 90° to 85° Far.; and in this case the number of seconds would be much less than half, from the rapidity of cooling being in a greatly increased ratio to the difference of temperature.

A very important consideration is the choice of thermometers. For this purpose they should be without any kind of frame, except a hook at the top for convenience of suspension. I prefer the spirit thermometer as being more easily seen, and as less rapid in its descent than mercury, and the cylindrical bulb as being less liable to be broken than the spherical bulb. In order to obtain uniformity in the action of different thermometers, to be used by observers in different localities, it will be necessary to place a number of them,

previously graduated at 80° and 90°, in cold water and cold air of certain assigned temperatures, and to select from these such as cool down at what shall be fixed as a standard rate.

For example, the thermometer now used by me cools down the 10° in water at rest, temperature 45° Far., in 6″; and in water at rest, temperature 65° Far., in 12″. In water the cooling is too rapid to secure accuracy in counting the seconds, and therefore must not be depended on. The rate of cooling in air may be taken by placing the thermometer in the middle of a cylindrical bottle of certain dimensions, say two inches diameter, so as to guard it against currents. If the thermometer which I now use be taken as a standard, its rate of cooling from 90° to 80°, within this cylinder, is as follows:—At 40° it cooled in 122″; at 60° it cooled in 186″. If the instrument was not enclosed within the cylinder the results would be very different and very uncertain, from the effect of currents of air, even in the most sheltered apartments, as will be evident from experiments to be mentioned hereafter.

For counting the seconds a second watch may be used; but as it requires some practice to keep the eye both on the thermometer and the dial at the same time, and especially at the moment of stopping, the easiest mode is to use a string pendulum vibrating half seconds. This is portable; and the rod or ring to which it is attached may be suspended any where within view of the observer, due care being taken that it shall not produce a current of air so as to affect the bulb of the thermometer.

The following observations are intended to illustrate the facts exhibited by the heated thermometer:—

First.—*It shows the conducting power of air or water, respecting which the ordinary thermometer is absolutely silent.*

The temperature of an apartment warmed with fire and gas was 54° Far.; in it the *animal-heat thermometer* cooled from 90° to 80° Far. in 94″. The same heated thermometer, in water of same temperature, cooled the same amount in 8″. Thus showing that water at 54° Far. is nearly 12 times as cold as the air at the same temperature—a fact conformable with our sensations on taking a cold bath of the same temperature as the air, but of which the ordinary thermometer takes no notice.

In a closed room, temperature 40° Far., it cooled in 74″. In the same room, same temperature, the bulb loosely covered with a piece of damp woollen cloth, it cooled in 36″. Thus showing the effect of damp clothes, even in the house, to be as 2 to 1. This proportion

would, no doubt, be greatly augmented out of doors, and by exposure to a breeze.

Second.—*It shows the cooling effects of currents in the surrounding media of air or water.*

In water at rest, temperature 70° Far., it cooled in 24″; but when agitated in the same, in 15″. In this simple experiment we see the real limit to swimming. Great as are the muscular achievements in which some men excel their fellows, none have ever been able to swim beyond a certain distance—such as that across the Hellespont—because the application of fresh surfaces of water, even of the ordinary temperature, cools the body beyond its powers of supplying heat. Here we have the cooling as increased by progression compared with our remaining stationary in the water in the proportion of 100° to 60°, which would be much greater at a lower temperature.

In a room, temperature 57°, the *animal-heat thermometer* cooled in 115″. When blown on with a bellows, in the same room, it cooled in 16″. It is needless to say that the thermometer, in its ordinary application, gives no note of this difference; the wind blown from the bellows having the same temperature as the air of the apartment, and yet the cold is nearly as 100 to 14. This cooling effect of currents is illustrated by the punkah used in the East, and by the ordinary fan. Even in a room, with all the windows and doors shut, there are cooling effects of the internal currents to be measured by this instrument. Thus, the animal-heat thermometer, in a closed apartment, temperature 60°, cooled in 131″. Placed in the same apartment, in a cylindrical glass jar about two inches in diameter, it cooled in 157″; showing the warmth in the one case to that in the other as 83 to 100—of which the thermometer gives no indication.

Third.—*It shows the effects of wind, that most important element of climate, and which is entirely unheeded by the ordinary thermometer.*

Exposed to the open air, temperature 61°, it cooled in 45″. Exposed to the same air, but protected by the glass cylinder, it cooled in 149″; showing the warmth experienced in the one case to be to that in the other as 30 to 100; and yet in our best thermometric accounts of climates this difference is unnoticed, as if it did not exist.

I have learned from a lady, once resident in St. Petersburgh, that during the great severity of winter, when the thermometer is at many degrees below zero, the drivers of public vehicles are bound

to be at their stands; but if there is a wind, even to a small degree, they may stay at home, it having been ascertained that dangerous and even fatal effects resulted from such exposure. Similar observations are recorded in the journals of our arctic voyagers.

This cooling effect of the wind, which makes itself to be felt even when blowing at a moderate temperature, has not hitherto been attempted to be estimated—and it is improbable that it will ever be accomplished in any other way than that now proposed. Even with respect to the anemometer, supposing that it could be rendered applicable to this purpose, yet difficulties meet us *in limine.* Mr. Glaisher (Report on Meteorology, 1847) says that "we can speak with no confidence as to the average strength of the wind, no two observers having estimated the value upon the same scale."

Fourth.—*It shows the refrigerating effect of air admitted into apartments from open windows.*

In a room without a fire, temperature 44°, it cooled in 72″. In the same room, within a foot of the window open a few inches, the night being calm, and the external temperature being 34° Far., it cooled in 32″. In this observation the night was remarkably calm, and yet the cooling effect produced was more than two to one, although the difference of temperature, according to the ordinary thermometer, was only that between 34 and 44.

On another night, the internal temperature being 51° and the external 45°, the *animal-heat thermometer*, in the same apartment, near the closed window, cooled in 100″; but when a small portion of the window was open, so as to admit a blast from without blowing in that direction, it cooled in 33″; that is, the warmth which was as 100 suddenly became as 33, a ratio which would be greatly increased if the apartment had been at a high temperature; and it is in such cases that windows are most frequently opened for the admission of air.[a]

[a] The cold air thus applied becomes indeed "*the arrow that flyeth by day,*" and signalises its visit not so much by present inconvenience as by those various inflammatory and often fatal disorders resulting from it, which are so well known to the medical practitioner. In a long corridor at Sir Patrick Dun's Hospital, formerly left exposed to a violent current of air from open doors at the end of it, and felt to be inclement and dangerous even by those most reckless of cold, I believe it could be proved that to stop in it for a stated number of hours would be attended with more danger than to be present for the same space of time in any of the great battles fought in Europe. In none of these have the killed and wounded amounted to more than one-fourth of the armies engaged; a proportion inferior to that of the fatal and dangerous diseases certain to be produced by the blast in that corridor during the same number of hours. The agency of cold as a cause of disease is apparent in the tables of

Fifth.—*It shows to what degree the heat derived from an open fire-place is accompanied by a cooling process from the current of air rushing towards the fire.*

In front of a small screen opposite the fire the thermometer stood at 61° Far., the *animal-heat thermometer* cooled in 123″. Behind the same screen the thermometer stood at 54°, the *animal-heat thermometer* cooled in 79″. Now, in an apartment of the same temperature, the *animal-heat thermometer*, not near the fire, cooled in 100″. This shows, that in the case of a man sitting opposite the fire, warm as his shins may be, the calves of his legs are not only not warmed, but are exposed to a cold above that of an ordinary apartment of the same temperature in the proportion of 100 to 79.

Sixth.—*It shows the cold and heat of climates as actually felt by human beings.*

The tables which I have kept to compare the *animal-heat thermometer* with the ordinary thermometer, as a means of measuring cold, prove the latter to represent only one out of several agencies engaged: hence, while sometimes a certain conformity between them is observable, yet the *animal-heat thermometer* takes a much wider range, shows a greater sensibility, and always has this distinctive peculiarity, that it represents the temperature as judged of by the feelings of the observer. This conformity between the results of the *animal-heat thermometer* and our feelings is confirmed no less on taking averages than in individual observations. Thus, on comparing two tables—one of 20 days' observations, taken in September, outside a window with a north aspect, but in some degree sheltered from that wind, and the other table of 24 days' observations, taken inside the apartment, which was always without a fire, the heat of the outside was to that of the inside, according to the ordinary thermometer, as 90 to 100, but according to the *animal-heat thermometer*, as 54 to 100. Now, that this latter number expresses the truth must be evident to any one who has ever enjoyed the shelter of a house as contrasted with exposure to the open air.

When we find in Professor Dove's isothermic lines that in the month of January the temperature of the centre of Ireland is the

mortality during the months of winter as compared with those of summer. Even during the latter season the same agency is in active operation. From an estimate which I made of the patients, in summer, at Sir P. Dun's, most of them chronic, and all serious cases, above one-half were to be distinctly referred to cold variously applied, but in the greatest number to currents of air.

same as that of Montpellier or Marseilles, we see a statement so contrary to the experience of living men and women as to proclaim loudly the want of some other means for ascertaining the effects of climates besides those hitherto in use. It is under the conviction that this mode of observation supplies the defect that it is submitted to the medical profession as most immediately suited for their purposes.

The apparatus is so simple, the method of using it so easy, and its results so exactly accordant with the effects produced on the sensible surface of the human body, that by it the one instrument seems to present us with an epitome of all that we want to know from all the instruments now used in meteorology: hence, then, long as this proposal has been neglected, I cannot refrain from attributing it to the imperfect manner in which it has been brought forward; and I still hope that, sooner or later, it may attract the notice of those who shall have the opportunities of testing its utility and practical importance.

Art. X.—*On the Statistics of the Mortality of Fractures of the Skull; Effects of Operation, &c., &c.*[a] By Henry Murney, M.D., Surgeon to Belfast General Hospital; President Belfast Clinical and Pathological Society; formerly Demonstrator of Anatomy Queen's College, &c., &c.

I have frequently noticed there is a tendency to class all fractures of the skull together, and to look upon the patient's prospect as little short of hopeless. Serious as the mortality is, I did not think an examination of statistics would show so many sufferers rescued from death.

I would here observe that, as a rule, I look with great caution on statistical tables, knowing how frequently cases are classed together because of some trifling point of resemblance, although they may differ in most important particulars; and also, that it is much more likely a man would publish a successful than a fatal case, not that any desire to mislead or give a false idea of the mortality of a disease might exist; but when, from the serious character of the affection, it was expected the tendency would be to death, a sense of

[a] Read before the Belfast Clinical and Pathological Society.

satisfaction, perhaps a lurking one of pride, that, contrary to all anticipations, recovery ensued, might tempt him to place on record that which probably he would not have done if the prognosis had been verified. Grave objections, no doubt; but, on the other hand, I may say, for some time past, our Medical Journals have contained records of all the most serious cases, with operations performed, in the London and principal Provincial Hospitals in England, we are thus likely to obtain an account of all unsuccessful as well as successful cases, and will be enabled to approximate the mortality of many injuries not yet precisely defined. I would add my belief that, from the fatal character of fractures of the skull, surgeons hesitate less about the publication of the cases than in many other affections requiring interference. These reasons I consider are sufficient to warrant a greater degree of confidence than is usually reposed in statistical tables, and I make use of them as giving by figures an approach to the mortality, effects of operation, &c., &c., and some other particulars in this class of affection.

I have records of several cases of fractures of the head which have come under my notice, I shall take the liberty of referring to a few of them where I find they illustrate portions of the subject. My information is not so accurate on some points as I could wish: for instance, in fracture of the base, the reporter frequently mentions that fact without specifying the part of the skull involved; and in injury of the superior region of the head, the calvaria is named without specifying the bone or bones injured.

I have taken a period of 10 years, from 1851 to 1860, inclusive, and have tabulated the cases of fractures of the skull to the number of 253, which appear in the following Journals:—*Times* and *Gazette; Lancet; Dublin Medical Press; Dublin Hospital Gazette; Edinburgh Monthly Journal; Dublin Quarterly; Guy's Hospital Reports;* and the *Trans. Belfast Clin. & Path. Soc.* I have also examined *Braithwaite's Retrospect*, and the *British and Foreign Medico Chirurgical Review.* I had not access to other Journals. Twenty-five cases were treated by practitioners not attached to public institutions; all the others were contributed by the attendants on the large metropolitan and provincial institutions, or by medical officers in the public service.

Of course I shall follow the usual division of the subject, viz.:—Fractures involving the calvaria or lateral parts of the head, and fractures of the base; and first of the former:—In addition to cases I have treated myself, I have the particulars of 187. In 84 of these

the fracture was situated in one of the parietal bones; in 57 the frontal; in 9 the occipital; and in 37, two bones of the calvaria or lateral regions of the head were implicated, or the precise part of the skull-cap was not specified.

The mortality in these several localities was as follows:—most serious of the last mentioned—out of 37 cases, 22 died; then in fractures of the occiput—of 9 cases, 5 died; next we have injury to the frontal bone—of 57, 25 died, and one remained under treatment. Fractures of the parietal bones were most numerous and least fatal, as of 84 cases, 34 died, and one remained under treatment. As a summary we have 86 deaths; 99 recoveries; and two undisposed of, in a total of 187 cases, being 46 per cent. of deaths. A question has occasionally arisen, which are the most fatal fractures of the superior region of the head? The above shows that injuries to the posterior region are most, and to the superior least dangerous; and that fractures of the frontal occupy the middle place in danger as in frequency.

Of the 187 cases the bone was depressed in 149. Should the bone be elevated in every such case? should elevation be performed on the occurrence of reaction, whether symptoms of compression are present or not? or would the prospect be more satisfactory by delaying till well marked signs of pressure are exhibited? does the age of the patient modify in any way our opinion?

On reference to some of the older writers, as Pott and O'Halloran, we find that every case of fracture, with depression, was considered fit for the trepan. In the introductory observations to his work on injuries of the head, published in 1793, the latter writer lets us know, in his quaint style, how frequently he was called on to perform this operation, he writes:—"I have had no less than four fractured skulls to trepan on a May morning, and frequently one or two. In the course of above thirty-five years practice, I may safely affirm, because truly, that on an average, one month with another, from three to four cases have fallen to my share, of either fractures, concussions of the brain, or extravasations."[a] Again he says, "Every fracture with depression necessarily demands the operation; and though some particular cases may be adduced, when nature has somehow or other brought about the business of healing, yet it is by no means to be trusted to; and the surgeon is inexcusable who fails to attempt, at least to propose and press it. Simple fractures

[a] Introduction, p. 5.

of the cranium, with depression, when relieved on the spot, or in the space of two or three days, almost always terminate happily. In the course of more than 200 accidents of this simple kind, I cannot recollect a failure in a single instance."

"Fractures without depression do not demand operation."[a] Pott considers all depressed fractures require operation; and nearly all undepressed, also require the interference of the surgeon. He says, "perforation is absolutely necessary in seven cases out of ten, of simple undepressed fractures of the skull. Let us for a moment inquire why it is so. The reasons for trepanning in these cases are, first, the immediate relief of present symptoms arising from pressure of extravasated fluid; or second, the discharge of matter formed between the skull and dura mater, in consequence of inflammation; or third, the prevention of such mischief as experience has shown, may, most probably, be expected from such kind of violence offered to the last mentioned membrane. These are the only reasons that can be given for perforating the skull in the case of an undepressed fracture; and very good and very justifiable reasons they are, but not drawn from the fracture."[b]

In another place he says, "I have no doubt that although by establishing it as a general rule, to perforate in all cases, some few would now and then be subject to the operation, who might have done very well without it; yet, by the same practice, many a valuable life would be preserved, which must inevitably be lost without it, there being no degree of comparison between the good to be derived from it when used early as a preventative, and what may be expected if it be deferred till an inflammation of the dura mater, and a symptomatic fever make it necessary."[c]

I find elevation of depressed bone was practised in 124 of the cases I have tabulated, of these 60 died; 62 recovered; and 2 remained under treatment; as nearly as possible the deaths were 50 per cent.

In 25 cases of fracture with depression, no operation was performed. On analysis of the symptoms of those who recovered—one had profound insensibility; another was insensible and convulsed; another had partial paralysis; the remainder were partially insensible, or had threatened inflammation in the head. Of those who died the symptoms recorded are:—insensibility in one; paralysis in another; epileptic fits in a third; (I use the expressions of

[a] Introduction, p. 31. [b] Vol. I., p. 104.
[c] Page 111.

the reporters,) 7 died; 18 recovered: being a mortality of 28 per cent.

Some interesting Cases of Fracture of the Calvaria with Depression, have come under my observation in hospital:—

A lad 16 years of age, while engaged at work in one of the ship yards, received a blow on the side of the head from a heavy piece of timber which had fallen a height of 10 or 12 feet; when brought to hospital we were informed he had vomited a large quantity of blood; he laboured under collapse first, then concussion; on careful examination of the head (there was no scalp wound,) a fissure extended from the left parietal protuberance forwards for about one and a half inch, bifurcated, producing the shape of the letter Y; the piece of bone between the limbs of the letter, and also, one margin of the fissure, in its posterior part, were depressed, I would say rather more than the thickness of a half-crown. The symptoms of concussion yielded after a time, and were followed by cerebral irritation, and inflammation of a not very intense form. When convalescent I felt dissatisfied with his stolid stupid manner, but learned from his friends he was of a sulky disposition, and that his mind and character were as before the accident. The treatment adopted was cold applied to the head, mercury in small doses, until the constitutional effect was produced, and when necessary, purgatives.

In this case, from the vomiting of blood, I feared more serious mischief than the fissure of a small portion of bone. The possibilities of fractured base, or of injury to the liver, or some important abdominal organ, suggested themselves; but when hours passed by and full reaction was established without its recurrence, my attention was fully turned to the concussion; as it subsided from the depression of bone, I looked for the appearance of symptoms of compression—had such manifested themselves, I would have cut down and raised the bone.

A few days after the admission of the last, a boy, aged 13 years, came under treatment. Two evenings previously, while seeking for a ball, he had fallen from a man's shoulders and alighted on his head; he is reported to have been insensible for a short time, and on recovery to have vomited repeatedly, and complained of pain in the part injured, with general headache and sickness of stomach. On admission the head was shaved, no wound or abrasion was visible, but a fissure of the skull, as in the other case, was felt, extending from the left parietal protuberance forwards almost to the

anterior border of the bone; the upper margin of this was depressed to about the same extent as in the other case.

I placed him on low diet, gave him some alterative doses of mercury, and kept him in hospital for a time.

Here we have one of those most infrequent cases—a grave injury followed by most trifling constitutional disturbance; in fact, from the time he came under my care he was well—all headache, &c., &c., had passed off. My treatment was merely precautionary.

Again, about a week later, a fine boy, about eight years old, was brought to hospital—a log of timber had fallen on him, fracturing the right forearm very severely, and causing a wound which commenced at the right frontal protuberance and stretched upwards and backwards about four and a-half inches in length; the scalp was separated to a considerable extent, and a fracture, parallel to the wound, occupied fully three inches of the frontal and a small portion of the parietal bones; there was depression to fully the thickness of the skull. In the unavoidable absence of my colleague on duty, I saw him about an hour after admission. Bodily warmth was then restored, his pulse and respiration were slow; pupils dilated, uninfluenced by light; he lay quietly, head resting on the right (the injured) side; when turned on the left side he gave a fretful cry and endeavoured to replace it; by sharp speaking or pinching he could be partially aroused—give a monosyllabic answer, and then sink back into insensibility. The house surgeon informed me, half an hour before my visit he could be roused with much greater facility, when he gave his name, residence, &c., &c. That I might have an opportunity of noting the increase of the coma, I deferred operative interference for an hour, when I returned and examined him, and was satisfied the insensibility was greater than before.

I then had him removed to the theatre for the purpose of operation; immediately before commencing, I again essayed to arouse him, when suddenly he opened his eyes and answered quite collectedly, although slowly and rather stupidly. Under these circumstances I did not deem it necessary to raise the depressed bone.

The boy passed to the care of my colleague; he laboured under concussion for a time, and gradually recovered. He was discharged in seven weeks.

This was to me a most interesting case; had the profound insensibility, which was twice so marked, continued, my treatment would have been elevation of the bone with Hey's saw, if possible, if not, by the trephine first, then the saw. The occurrence of insensibility,

followed by a state from which he could be aroused, I believe, was due to cerebral congestion, for, after severe injury the circulation is embarrassed and imperfectly performed; and, I have several times noticed, although not so well marked as in this case, the insensibility sometimes more, sometimes less profound, without any apparent cause.

Ten months ago, a boy, 16 years of age, fell a height of 12 feet in the hold of a ship on Queen's Island, he alighted on the posterior part of his vertex. I was in the hospital on his admission, and was informed that he was insensible for a period of about 10 minutes after the accident, but from the time he was placed in the ferry boat until his arrival here, he was perfectly collected. There was a wound one and a-half inch long, situated over the upper part of the occipital bone; almost at the summit of that bone a V shaped fracture was seen, the point directed upwards; the limbs were each about one inch long; the bone was depressed fully the thickness of two half-crowns; he merely laboured under collapse, and was quite astonished when I ordered him to bed. The wound healed up, and he was discharged in a month.

I saw him six months afterwards, he had not experienced the slightest bad effects from the fracture.

This is another example of a most serious injury without the appearance of a single bad effect—in fact, so well did he feel, I had considerable difficulty in keeping him in hospital for a reasonable time.

Is the danger to the patient increased by cutting down to make an examination merely of the site of fracture—by, in fact, rendering the fracture which was simple, compound? Most surgeons are opposed to this treatment, Sir Astley Cooper, in his forcible language, says, "the man who would do so should be cut for the simples." Mr. Guthrie and others do not consider the patient's danger is in any way increased by it.

I believe the principal advantage to be attained by it is, that we can ascertain more accurately the extent to which the cranium may be fissured, and the amount of depression of the outer table; also, if death of a piece of bone is about to take place we are made cognizant of the fact at an early period by its altered appearance. Although I would not practice it heedlessly, or without due consideration, I should have no hesitation in cutting down, provided I was uncertain as to the extent or amount of the depression of bone.

Of fractures without depression we have reports of 38 cases, of

which number 25 were subjected to operation and 13 were not; of the former 13 died, 12 recovered; of the latter 5 died, 8 recovered. Among those subjected to operation, we have 3 cases of paralysis; 5 more or less convulsed or with epileptiform fits; 4 insensible; 3 of compression; 3 of encephalic inflammation; and, what I consider strange, 5 are marked as labouring under very slight symptoms or none at all. Those not submitted to operation suffered from slight concussion, collapse, effects of shock, &c., &c. One, a recovery, had epileptic fits.

In December, 1858, I brought before the notice of the Belfast Clinical and Pathological Society, some cases of fracture of the skull. One was a patient with fissure of the frontal bone. In giving a brief account of his case, I stated, he laboured under paralysis which gradually became general. Under treatment this slowly passed off, and he was discharged from hospital quite restored. Twelve months after, this man came under the care of one of my colleagues, he had fallen into a vat of boiling ley in a bleaching establishment. He told me he had enjoyed excellent health since his dismissal; he had not suffered from headache, loss of power, or any effect of his injury. In a few days after his second admission he was attacked with tetanus, and died. I made an examination of the head and removed the portion of the calvaria which had been fractured, and which was completely united. The dura mater was most intimately adherent to the bone in the vicinity of the fractured part. The brain, &c., &c., were perfectly normal.

A man, aged 22, had the upper part of his occipital bone fractured by a heavy piece of iron falling on him, from a height of 12 or 14 feet When admitted he laboured under the ordinary symptoms of collapse; then well marked concussion. The fissure of the bone could be readily detected at the bottom of an extensive wound. There was no depression. In a month he was discharged from hospital perfectly well. The case was an average one, without the appearance of a single peculiar or anomalous symptom.

Thirty-four cases with depressed bone, although not labouring under symptoms of compression, were operated on; of these, 22 recovered, 12 died. As many of the contributors do not mention the symptoms (if any) which existed before operation, I have no doubt, this series should be much greater. I have, however, merely tabulated those in which the writer distinctly records the absence of compression.

I must confess my inability to understand the indication for the use of the trephine or saw, where the report states the patient was "sensible" or had no symptoms of compression. And, although I find this practice has been followed by some surgeons, I would not pursue it, therefore, cannot commend it. I consider, at all times, even in the hands of the most skilful, the use of the trephine must expose the patient to considerable risk of encephalic inflammation, and, that we are not justified in operating as a mere precautionary measure, but only in those cases, in which, from symptoms of compression, we have reason to believe there is pressure on the brain which may be relieved by interference.

There may be an exception to this rule, as occurs frequently in military practice, a bullet producing what might be styled an indented or stellate fracture; or in civil practice, a blow from the sharp angle of a brick or slate, driving in the outer table and breaking the inner to a greater extent. Here we might expect pressure on the brain or more extensive laceration of the membranes than the slightly depressed condition of the outer table would indicate; in such a case the appearance of less urgent symptoms, as convulsive twitchings, epileptiform seizures, would be a sufficient warrantry for the use of the trephine.

I may here appropriately refer to the question of the frangibility of the tables of the skull. For many years my anatomical experience made me look with considerable doubt on the generally received opinion, that the inner table is so much more easily fractured than the outer. I often observed, if great violence be applied to a skull-cap, the tables would be fractured to about the same extent. In 1858, in a most valuable series of lectures, delivered in the College of Surgeons, England, Mr. Prescott Hewett, not only noticed this, but carried his observations further, he found where violence is applied from within outwards, the outer table is usually injured more extensively than the inner—if from without inwards, the reverse; where great force is used, both will be broken to about the same extent. On reading his remarks I tried these experiments repeatedly, and believe his statements are correct. If, then, an individual has fallen from a great height, alighting on his head, or has received a fracture in some other way, from great violence, I would anticipate the tables of his skull would be broken to the same, or nearly the same extent, but, if a less force were applied to a small surface, I would dread splintering of the inner table.

Another question of interest is that of injury to the brain.

We all know the prospect is much brighter where bone is merely depressed without lacerating the dura mater; and injury to that membrane is less fatal than where some of the cerebral texture is torn, and possibly protruding from the wound. Some of the most experienced surgical writers look upon this latter form of injury *as almost* necessarily fatal—the mortality is very large—and yet many recover. I have made a distinction between protrusion of the brain and hernia cerebri, as it is at times called, on the one hand, and simple wound or laceration on the other. Where wound of brain has terminated in hernia, I have placed the case under the former head.

Of cases styled protrusion or hernia, there were 35 reported—17 died, 18 recovered. Of wound or laceration, 27 cases—18 died, 9 recovered; total, 62 cases, with 35 deaths. Of these, 9 had more or less of paralysis or convulsive twitchings; 7 symptoms of inflammation of varying degrees of intensity; 9 compression, the majority well marked, although some were not very profound. Then we have concussion, collapse, and shock; several described as not labouring under any symptoms; and some, in which the reporter mentions many of the leading features, but does not state this particular.

On looking at the mortality as it occurred at the different periods of life, we find up to the age of 10 years, inclusive, there were 24 cases with 9 deaths; between 10 and 20, 49 fractures, with 16 of a mortality; from 30 to 40, 86 cases, 48 fatal; and from 40 to 60, 24 with 10 deaths; two had not terminated when their reports appeared.

I do not consider it necessary to give an analysis of the plans of treatment pursued. In a considerable proportion indeed, the writers seem to have considered the indications so obvious, as not to have recorded it at length. I would merely observe, venesection was practised in 24 cases only. A marked contrast to the custom of the older writers, and also to the injunctions of many within a very recent period. Tartrate of antimony also seemed to be at a discount, for I find it was used in three instances only. The preparations of mercury were most generally employed, in some, merely as purgatives, in a considerable number until the constitutional effect was produced.

I would briefly sum up my views of fractures of the calvaria. The most dangerous are those of the occipital; the frontal next in order; the parietal least so.

The mortality in fissure of the calvaria and depressed fracture is nearly equal, considering all the cases. But take all the cases, whether depressed or not, in which operation was performed, the death rate was 50 per cent. All the cases where no operation was performed, the per centage was about 34; or if we contrast those cases in which there was depression but no operation, the mortality was 28 per cent.; with those also depressed and operated on without any symptoms, the deaths were 36 per cent. These facts must, I consider, point to the conclusion, that operative measures should only be used as a *dernier ressort.*

The cases of fracture without depression subject to operation, showed a mortality of 52 per cent. Similar cases not operated on, presented 33 per cent. of deaths. In cases of injury to the brain, the mortality was about 43 per cent. Operation is fully warranted when the injury is of the indented class already referred to.

In simple fracture, where there exists a doubt as to the extent of the depression, I consider the surgeon adds extremely little, if anything, to the risk of his patient by cutting down. Fractures are borne with greatest immunity in the first and second decennial periods. The danger to life is greatly increased in the third and fourth, and again diminished in the fifth and sixth periods. I have given a brief report of six cases of fracture of the calvaria with recovery in each. In two of these the occipital—in two the parietal—and in one the frontal were broken—and in one case the frontal and parietal were both involved.

I have examined the reports of 66 cases of fracture of the base of the skull. Of this number, 46 died, 20 were restored; about 69 per cent., an enormous death rate.

When we consider the great injury inflicted on parts so nigh to the most essential portions of the nervous system, generally themselves sufferers from laceration or extravasation, and the uncertainty which surrounds the recognition of these fractures during life, we need not feel surprise at the short list of authenticated recoveries.

In those injuries hitherto considered we had, generally, *tangible* and frequently *visual* evidence of their existence. In the present class, during life, in many cases we are dependent for our prognosis on symptoms which bear no proportion to the amount of fracture sustained.

As an illustration, I would mention the following:—Within half an hour of the admission of the boy with compound fracture of the frontal and parietal bones, whose case I have related just now,

a man, aged 60, was also admitted to hospital. While engaged white-washing a house, on a ladder about 20 feet high, a sudden gust of wind precipitated him to the ground. When I saw him about half an hour after admission, the surface was cool, not cold; he was *perfectly* collected; described how he had been engaged before his fall; said he was insensible until shortly before his admission; complained of pain across the temples. I noticed he was somewhat (a little) deaf; I asked was this the result of his injury, he stated he had been deaf for many years—he had bled from the right ear; but when I visited him within an hour of the accident the hemorrhage had ceased, and there was a little dried encrusted blood in the meatus externus.

Immediately after leaving the bed, the house surgeon, in conversation, suggested the existence of fracture of the base. My reply was, it may be present, but if we have not an opportunity of examination we are not warranted in placing the case on record as one of this injury.

This, with the other patient, passed to the care of my colleague on his return to town. Frequently, when in the ward, I spoke to the man; his mind was quite clear; he many times complained of being deprived of his snuff box. The only circumstance which attracted my attention was, he always lay on his back, and complained of pain in his head if the nurse turned him on his side. Until three days before his death, when he had symptoms of encephalic inflammation, his mind was perfectly clear. Death occurred ten days after admission.

I was not present at the *post mortem*, but was informed the brain showed evidence of inflammation, and a fracture passed through the right petrous bone, without involving the tympanum.

Now, I consider the absence of all head symptoms fully warranted the opinion I expressed. The small quantity of blood which flowed from the ear was of no value as a diagnostic, and the trifling complaints of the patient might readily be caused by contusion.

I consider these two cases are worthy of being placed on record. First, a sailor, 20 years of age, was admitted on 16th June, 1859. While intoxicated he had fallen into the hold of his vessel, a height of 12 or 14 feet, alighting on his head, and receiving a fracture on the left side of his forehead from the sharp angle of a brick. The fissured condition of the bone was visible at the bottom of an extensive scalp wound, it stretched down to the supra orbital foramen, and was of a † shape. The amount of insensibility was only partial,

as he could tell his name and age. His breathing was natural; pulse 60; skin cool; on being let alone he turned off to sleep immediately. There were two small contused wounds on the left side of the face, one beneath the outer, the other beneath the inner canthus; for some hours continuous bleeding poured from these wounds, followed, for 24 hours, by *copious weeping of serum.* There was considerable extravasation of blood behind the left ocular conjunctiva, and the eye-lids were very much ecchymosed. From this I diagnosed that the fracture, which was traced to the supra orbital foramen, extensively involved the roof of the orbit. I also considered the serum was arachnoidean which had passed behind the ball, and made its way out by these wounds. On the 18th, he had well marked symptoms of inflammation of the encephalon; on the 21st, he had paralysis of the right side; he died on the 25th—nine days from the injury. Insensibility was almost complete after the first day.

I made a *post mortem* 12½ hours after death. A large collection of pus occupied the cavity of the arachnoid anterior to the left hemisphere; the arachnoid, especially in the neighbourhood of the superior longitudinal sinus, was thickened and opaque; general vascularity of the pia mater. On removing the brain, two clots, each about the size of a shilling, were found, one on the roof of the left orbit, the other in the middle fossa of the left side; the brain substance was normal in consistence, but highly vascular in all parts, both cortical and medullary. The fracture in the calvaria was more extensive on the inner than the outer table, without depression, extending from below the left frontal eminence to the margin of the orbit at the supra orbital foramen, in length, say one and three-quarters inch; a similar fissure extended across the top of this, at right angles, producing a T shape. In the base the fracture stretched backwards, from the supra orbital foramen through the roof of the orbit, completely breaking away a piece of bone, nearly circular in shape, of the size of a shilling, rather internal to the centre of the orbital roof; this could be readily removed by the forceps; the continuation of the fracture extended from the left towards the right side, through the olivary process and body of the sphenoid bone, into the right side of the basilar portion of the occipital, terminating half-inch anterior to the foramen magnum. None of the other cavities were examined.

The extravasation beneath the conjunctiva enabled me to express the opinion that the fracture extensively involved the roof of the

orbit. The weeping of serum also pointed to fracture of the base. I had never witnessed it from this situation, nor do I recollect having seen it recorded—I think it must be infrequent.

The second case was somewhat similar:—On 11th May, last year, a man, 19 years of age, fell from a scaffold 20 feet high, alighting on his head. On admission he had bleeding from the left ear and nose; he had also extravasation of blood beneath the left ocular conjunctiva; he had symptoms of collapse first; then concussion; during the day he several times vomited blood. As the effects of the concussion passed off in the evening and early part of the night, he was not only able to answer questions, but manifested curiosity as to where he was; how the accident occurred, &c., &c. This continued till within an hour of his death, which took place 13½ hours after the accident. On examination, two fractures extended from the left frontal eminence downwards; one in front of the external angular process, the other behind it; the brain was considerably congested, but was not lacerated or injured in any part; a small extravasated spot was on the most prominent portion of the middle lobe of the left side; another over the superior vermiform process of the cerebellum; and a third on the upper surface of the tentorium, near the right perpendicular semi-circular canal; the brain substance was healthy.

There were two fractures in the roof of the orbit—one at its fore, the other at its back part; both were connected with the fissure which stretched down the forehead; two also ran in the middle fossa and terminated at the foramen ovale. Here the bleeding from the ear and nose, with the vomiting of blood, pointed to the existence of fracture of the base; the extravasation behind the conjunctiva, to injury of the orbital roof.

In the former case, the fracture stretched into each of the three fossæ, in this the anterior and middle were involved.

Two other instances of extensive fracture of the base came under my notice. One, an elderly man, was knocked down in the street by a blow from the shaft of a car, he lived five days. On *post mortem* at least one ounce of blood lay between the dura mater and the skull-cap; there were three clots on the surface of the brain, and there was laceration of the grey matter on that portion of the middle lobe which occupies the middle fossa; the calvaria was most extensively broken, and the anterior and middle fossæ fractured. The other, also an elderly man, had fallen down the cabin stairs of a steam boat, a height of about 12 feet; he lived 24 hours. On

post mortem the condition of the brain and membranes was much the same as just described; there was no fracture of the calvaria; in the base the middle fossa was extensively broken, and the lesser wing of the sphenoid chipped off. I do not give the details—as neither of these cases presented features of much interest, but place them on record for future statistical inquirers.

From the accounts of the *post mortem* examinations, the following were the situations of the fractures:—Of the middle fossa alone there were 11 cases; of the anterior 10; of the posterior 2; of the anterior and middle 4; of the posterior and middle 9; one of these had separation of the coronal suture. There were 5 cases of fracture running into each of the three fossæ; three of these had, in addition, separation of the coronal suture. There were 5 cases in which the precise locality is not described. On analysis of the fatal cases, we may fairly exclude the following, when considering the per centage of mortality. First, a case of fracture of middle and posterior fossæ, with fracture of some of the lumbar vertebræ; second, fracture of the anterior fossa, and of the seventh cervical vetebra; third, fracture of middle and posterior fossæ, with fracture of several ribs and other injuries.

In such instances the serious injuries mentioned would of themselves suffice to cause fatal issue.

Again we have unusual, and I may say, necessarily fatal cases, such as a piece of nail-rod penetrating the roof of the orbit, lacerating the brain, and causing copious hemorrhage by rupture of the anterior cerebral artery.

The extremity of a walking-cane passing through the nostril, perforating the ethmoid and sphenoid bones, and impacted in the lower part of the brain.

Brass ferrule of an umbrella perforating the roof of the orbit and impacted in the brain—and a piece of tobacco pipe lodged in the same locality. The last three were only discovered on *post mortem.* In all, 7 to be deducted from the number of 46 deaths, which would leave 39. Add to these the 5 cases I have now recorded. This would leave the mortality as already stated. I have brought forward some of, to me, the most interesting matters connected with 193 fractures of the calvaria, and 71 fractures of the base of the skull. In all, 264 cases. Many of the matters I have only touched upon would, I know, supply ample material for valuable papers.

ART. XI.—*Hospital Reports.* By JOHN HUGHES, M.D., Senior Physician to the Mater Misericordiæ Hospital.

CASE I.—*Malignant Disease of the Cecum, and Fatal Obstruction of the Bowels.*

ANNE NEILAN, an unmarried woman, aged 32, was admitted into hospital on 24th October, complaining of constipation of the bowels, which resisted the action of medicine for the previous 10 or 12 days, accompanied by vomiting, loss of appetite, and general prostration. She was very low and desponding; having a small weak pulse, and complained of pain in the abdomen. She told us her stomach was deranged for some time; that she suffered much, of late, from flatulent distention of the bowels and eructation of air; and that, although she took a quantity of medicine, her bowels, habitually costive, were not moved for the last 10 days.

The tongue was clean, moist, and firm; the lips and cheeks were remarkably florid; the skin cool; the urine natural; in fact there was a complete absence of fever. The pulse was small, weak, but not very frequent—only 80 in the minute.

The abdomen was full, resonant on percussion in the umbilical region, but not tender to the touch. She could bear pressure over every part of it; and the most careful examination failed in discovering anything abnormal. The stomach was, however, very irritable, and almost everything taken was quickly rejected; nevertheless we indulged in the hope that nothing more serious existed than a temporary obstruction from accumulated feces in some portion of the canal; and the comparative mildness of the symptoms did not tend to discourage such an impression.

After her admission, a mixture containing a saline purgative was ordered to be taken every third hour until the bowels were moved; at the same time small quantities of ice were given to allay the vomiting; and light nourishment was directed as soon as the stomach became tolerant of food. The medicine acted with partial success, and two or three small fecal discharges were obtained, rather fluid, but natural in colour, to the great relief of the patient. The vomiting was allayed, and she appeared better; but in a few days all the previous symptoms reappeared; the vomiting returned; and the pain was increased, and now located in the right iliac region. She described it as being very severe, and coming on in paroxysms; but

not materially aggravated by pressure; and there was no fever. Again a most careful examination was made, but no hernial or other tumour could be discovered.

The rectum was explored, but no hemorrhoidal or other tumour existed; and the long tube passed readily into the gut, proving there was no stricture there.

The appearance of the abdomen, however, was very peculiar. It was rather flat, knotty, and uneven, presenting a series of inequalities. The form of the intestines could be seen, apparently knotted and twisted together, and they felt full of fecal matter, which a strong and continuous vermicular action tried to force onwards without success.

It was quite plain a most serious obstruction did exist somewhere, and the question came to be discussed—"What was its nature?" That it was not of an inflammatory character was evident from the absence of constitutional disturbance; but whether it arose from the pressure of a tumour upon the intestinal tube, from cancer of the intestine itself, or from introsusception, we could not determine. Fearing, however, there might possibly be some local inflammation, however slight, I determined to give my patient the benefit of the doubt, and ordered mercury with opium, internally, and counter-irritation. Some transient relief followed; but no medicine could be persevered in, as the stomach was so irritable everything was rejected almost as soon as it was taken.

For some days she continued in a state of alternate ease and suffering, and without any evacuation from the bowels, although they could be readily seen and felt loaded with their contents, and striving to force a passage onwards. Even the enemata, which were often repeated, brought away no fecal matter.

On the 2nd November—nine days after her admission—she felt more depressed than usual, and said her stomach was very sick, and had been so during the previous night. While she was answering my inquiries vomiting occurred, and a large quantity of fluid feces (certainly more than a pint) was expelled through the mouth. Every one present recognised the peculiar odour of fecal discharges, and so did the patient herself; for while expressing her great relief by the occurrence, she complained of the manner in which it was accomplished. During a few days after this she was easier, and appeared to rally. She took some nourishing broths, and the stomach was quiet.

But the amendment was only temporary. The vomiting and pain

returned with greater violence than before, and symptoms of typhoid peritonitis set in. The abdomen became very tender to the touch, all over. The tongue was dry and black; the pulse was scarcely perceptible; delirium set in, and the patient so rapidly sank that we imagined a rupture of the intestine and extravasation into the peritoneum had taken place, as a result of the violent and continued efforts to get rid of its contents. Such, however, did not happen, as was afterwards shown.

During this woman's illness, in the hospital, her case excited a good deal of interest—more especially after the fecal vomiting occurred; and some of my colleagues kindly saw her, with me, during the last days of her life. Every known cause likely to produce obstruction of the bowels was discussed; but the weight of opinion was against malignant disease, owing to the age, and particularly the appearance of the patient.

A *post mortem* examination was made 24 hours after death, and, on exposing the abdominal cavity, we found the small intestine full and loaded with feculent matter; the peritoneum showed signs of recent inflammation of a low character, and contained a small quantity of sero-purulent fluid, somewhat resembling *pea-soup*, but there were no adhesions. The intestine itself was of a dark red colour, and its texture was readily broken through; but there was *no rupture of its coats*, nor any extravasation of its contents within the peritoneal sac.

On removing the intestines, we found the ilium, especially towards its termination, very much enlarged—probably to three times its natural size—and containing feces which assumed a firmer consistence as we approached the cecum, where the obstruction was situated. Here we found the canal, quite impervious, and the ilio-cecal valve surrounded by cancerous deposit, so as to block up the tube, and prevent the passage of the contents of the bowels. The stricture was so close that water poured into the intestine could not pass freely. There were also small round cancerous spots, about the size of a split pea, in the walls of the intestine, immediately near the valve, and the lumbar glands were affected; but beyond this there was no appearance of cancer in any other part or organ. Below the point of obstruction the large intestine was remarkably narrowed in calibre, and contained no fecal matter; but we found in it a portion of the enema, which had penetrated as far as the caput coli.

This case, interesting in many points of view, is peculiarly so

because of the absence of those constitutional signs which announce to us the existence of organic disease, particularly cancer. No one who saw this patient, and beheld her florid complexion and healthy appearance, could imagine she was labouring under a form of disease almost invariably associated with the anemic condition and peculiarly unhealthy aspect; and the only way I can account for the anomaly is, that perhaps the disease was of recent origin, and had not existed long enough to produce those changes so characteristic of cancer.

In a case, recorded by the late Dr. Todd, of a similar affection, the patient, who suffered a long time, was *remarkably pallid*—so much so, he says, as to attract the attention of those who entered the ward. And this anemic state existed although "the ordinary functions of the body were properly carried on, the circulation appeared healthy, there were no symptoms of dyspepsia, the bowels acted freely, the kidneys secreted as in health, and the usual quantity of urine was secreted; no fault of the catamenial function existed adequate to explain the anemic condition. There was no hemorrhage of any kind, nor any exposure to miasmata."

But this anemic appearance unaccounted for by any other cause, was of itself sufficient to lead Dr. Todd to the conclusion that his patient suffered from *malignant* or *cancerous disease*, although her age was only 30. And the *post mortem* examination proved he was quite right. It cannot be doubted that pallor of the surface is a prominent sign of cancerous disease; and the opposite condition in the present case is very singular, and probably only to be accounted for by its brief duration, owing to the mode in which the functions of the alimentary tube were interrupted.

This blocking up of the canal, too, is by no means the ordinary effect of cancer of the cecum; for in Dr. Todd's patient, who was under his observation many months, he says the bowels acted freely; and the examination, after death, showed there was a perfect freedom of transit for the intestinal contents through the cavity of the cecum. The cecum was reduced in size, and the caput coli was almost obliterated, so that the channel between the ileo-cecal valve (of which one lip still remained) and the ascending colon was exceedingly short; thus the action of the ilium was of itself sufficient to propel the contents of the bowels into the colon, and any accumulation was prevented. So, also, in a case reported, in the *Med. and Phys. Journal*, by Dr. T. E. Beesley, the passage was larger than is usual in health, notwithstanding a great thickening of the parieties.

The diagnosis of this case was extremely difficult and obscure. In Dr. Todd's case there was the peculiar anemic condition which led to the suspicion of malignant disease; and there existed, besides, a tumour in the right iliac region, and severe lancinating pain in that locality; but we had no anemia, no decided permanent pain, and no perceptible tumour; for it can be easily understood how the distended intestines would prevent its being felt had it existed. But in fact the cancer had not attained a size sufficient to make it perceptible, and consequently we possessed no data on which to base a satisfactory diagnosis as to the cause of the obstruction.

It was singular, indeed, how little febrile disturbance was present in this case, and how a condition of almost perfect ease and relief alternated with paroxysms of suffering—a relief which always succeeded vomiting; and so decided, that we were beginning to think the case was about to assume a chronic form, and that the contents of the bowels might be evacuated through the stomach, as sometimes happens in cases of obstruction. This belief was strongly increased after the large fecal vomiting which occurred some days before death, and which was followed by so much relief. We know how wonderfully, in some cases, the system accommodates itself to defecation by the mouth. And every one is familiar with the case detailed by Dr. Crampton, in the *Dublin Hospital Reports*, of a young lady who had obstinate constipation and stercoraceous vomiting for several years.

It may be inquired if the operation for artificial anus should not have been tried in this case?

I believe the question could not, with any propriety, be entertained, inasmuch as we could not ascertain the seat or nature of the obstruction; and, moreover, we had presumptive evidence it did not arise from any impediment in the large intestine, as the rectum tube and enemata passed readily into it.

The fecal vomiting in this case was a remarkable phenomenon. Whenever that event occurs from an inversion of the peristaltic action of the intestine, it is stated that in such cases the pressure of the fluids above the ileo-cecal valve and that below it being about equal, the valve becomes flaccid, and an intermixture of fluids takes place, and thus we have fecal vomiting.

But I apprehend the explanation is not satisfactory in this case; for it will be remembered the fecal vomiting did not occur till some days before death, and at a time when we were perfectly satisfied the large intestine was completely emptied by frequent enemata.

I know it is the generally received opinion that the intestinal contents do not become fecal until after they have passed the ileo-cecal valve; and I have heard surgeons more than doubt the occurrence of true fecal vomiting in strangulated hernia, because it is the small intestine which is commonly constricted. But it is quite certain, nevertheless, that true fecal vomiting occurred in this instance, and true feces was found above the valve after death. It occurred to me that probably disease modified the functions of the two portions of the canal; and, under the circumstances, the small intestine assumed the functions of the large in the obstructed state of the canal; or, possibly, that physiologists have not as yet determined with certainty what portion of the intestinal glandular apparatus eliminates that peculiar matter which gives to feces its characteristic odour.

Case II.—*Diabetes Mellitus—Saccharine Treatment of.*

The saccharine plan of treating diabetes originated, I believe, in France, and so far back as 1845. Bouchardat gave saccharine fruits in diabetes, and bread made from gluten. Andral and Piorry tried a similar treatment, with some success. And the practice has been recently adopted in England, by Dr. Budd, of Bristol, who has published some cases (two, I think) in which he says the most marked amendment followed the use of sugar. Others have also recorded cases; but they do not exhibit so favourable a result as those of Dr. Budd. It would appear, however, that some practitioners who tried this plan have found it beneficial. Their patients grew fat upon it; and even this effect, in a disease where wasting is so prominent a symptom, is a very desirable result. They say, besides, that the practice is not an irrational one; for Bernard has shown that sugar taken into the stomach, in its passage through the liver, is converted into an emulsive substance, which tends to fatten patients; and he has also proved experimentally, and Andral and others practically, that sugar is secreted and found in the circulation in diabetes, whether the individual be fed upon nitrogenous or amylaceous substances: consequently our old-established plan of dietetics in this disease, with all its restrictions, is useless.

Dr. Budd, one of its earliest advocates in England, says he gives sugar in diabetes on the principle of supplying to the system the particular element which is running to waste, and the loss of which appears to be the principal cause of the damage sustained by the

constitution as the disease advances. On all these grounds, then, it has been considered that the saccharine treatment of diabetes is worthy of a trial.

Amongst the many theories propounded concerning this intractable disease, modern researches incline to the opinion that the liver is the organ in fault—an idea long since entertained by Dr. Prout. Experiments by Bernard and Pavey tend to show that there is always present in the liver, located in the hepatic cells in considerable abundance, a substance which one calls the "glucogenic matter" of the liver, the other "hepatine;" that this substance is, with great facility, by a process allied to fermentation, converted into sugar; but that it seems to have the power, whilst located in the tissues of the living and healthy liver, to resist the transformation. In certain unnatural conditions, however, as well as after death, this power is at an end, and the blood becomes surcharged with saccharine principle.

If this be true, it would appear that the diabetic condition depends upon some functional derangement of the liver, which converts alimentary substances into this glucogenic matter in greater abundance than natural, and allows it to mix with the blood in large quantity, when it immediately becomes converted into sugar, and as such passes off with the urine.

I am not sure, even assuming all this to be correct, whether we are in a better position to decide upon the exact nature of this disease. Probably, however, it is to physiology we shall have to look, in the end, for a solution of this difficult question; for pathology is strangely barren of results in this disease; so much so that it is doubtful whether the presence of sugar in the system either necessarily depends upon, or produces, visible organic lesion of any particular organ. When organic diseases do exist, they are looked upon as merely concurrent affections.

However, it is not my intention to discuss the nature of diabetes mellitus; I merely wish to give a brief account of how this saccharine plan of treatment turned out in my hands, after a trial of more than four months.

Four cases of diabetes mellitus came under my care in hospital, almost simultaneously.

The first was a man named Thomas Ryan, aged 37, who had been diabetic for 13 months before admission, and had been under treatment for his disease during the greater part of that time. On admission he was voiding, daily, eight pints of urine, specific gravity 1049,

and containing 22 grains of sugar in each ounce. He complained of great thirst, languor, and debility; the skin and mucous membrane were dry; the bowels confined; and all the usual symptoms of diabetes were present.

I treated this man with Dover's powder and the vapour bath, for a fortnight, when he left the hospital relieved in respect to the condition of the skin and mucous membrane; his thirst was abated, and the skin was somewhat moist; the quantity of urine varied with the amount of fluid drunk, but its condition was unaltered. He thought he was growing weak, and wished to go home. He told me his father had a complaint similar to his own.

This man returned on the 18th January, and was then voiding 10 pints of urine daily, of a specific gravity 1041, 24 grains of sugar in each ounce. He said he drank a large quantity of beer, one day, at home, and was not as well since. I now determined to put him on the saccharine treatment, and ordered him six ounces of barley sugar daily; diet of fresh meat, with green vegetables and bread; also a moderate quantity of lime-water and milk. He continued this plan steadily for three weeks; and at the end of that period his condition was, to a certain extent, improved. The quantity of urine passed was seven pints, the specific gravity 1041; each ounce contained 24 grains of sugar; and he gained two pounds in weight. The skin was somewhat moist, thirst abated. He was again anxious to return home, and left the hospital.

The second case was a man, aged 40; but as he was not in hospital more than a week, and was treated with sudorifics (Dover's Powder) alone, and almost an exclusively animal diet—I will only refer to his case. In fact, he would not submit to the abstinence from fluids, and the variety of food which I enjoined. He left without any apparent change. There was one fact connected with him of interest—he told us his father had the same ailment he was labouring under, and died of it.

The next patient was a man aged 32 (John O'Neill), who suffered from the complaint for 18 months before admission. On the 3rd January he was voiding 15 pints of urine, of a specific gravity 1043, 18 grains of sugar to the ounce. He was very thin, and had all the symptoms of diabetes in an aggravated form. He was treated with sugar and a mixed diet, like the former patient; and at the end of six weeks his urine was reduced in quantity to six pints—the specific gravity remaining the same. All the other symptoms were greatly relieved, and he felt himself much better and stronger; in fact so

well that he was anxious to go and resume his former employment (that of a shopman). Yet, on weighing him, we found he had lost four pounds in weight since his admission, and his urine contained 22 grains of sugar to the ounce. We heard that he since died of phthisis.

The last and most interesting case is that of Henry M'Nee. He was a married man, 30 years of age; tall, well-proportioned, and of a very athletic frame. He was always temperate; had no hereditary predisposition to the disease, and attributes his illness to profuse perspirations and alternate chills while working as a railway labourer. Five years ago, when employed in England, he first noticed his disease, and was treated for it at the Manchester Infirmary. After four months stay in that institution, he left at his own request, relieved sufficiently to resume his work, at which he continued for 11 months before admission. At that time he noticed the aggravation of his disorder, which set in with great thirst, increased flow of urine, general weakness, and rapid loss of flesh.

On admission, all those symptoms had attained a great intensity. He said he was only the skeleton of his former self; for, when in health, he weighed more than 14 stone, and now he did not reach 12; which surprised him, when he could eat so much—four times his ordinary quantity—and he did not feel sick, only very weak. He was voiding 10 quarts of urine in 24 hours, of specific gravity 1049, and was obliged to empty the bladder every hour. He drinks about the same quantity of fluids within the same time. His urine has an acid reaction, is free from albumen, and each ounce contains 24 grains of sugar. As an evidence of his broken down health we found a large, chronic, indolent ulcer over the right external ankle.

I was determined to give the saccharine treatment an uncomplicated trial in this case; and, after an aperient, I put the patient on six ounces of sugar, daily, together with four ounces of treacle; bread, meat, and green vegetables for diet; lime-water and milk for drink—with an injunction to limit the amount as much as possible.

At the end of a month he was somewhat improved. He had gained two pounds in weight; his thirst and appetite were diminished; the quantity of urine passed in 24 hours was reduced from 10 to 7 quarts; the specific gravity ranged from 1043 to 1045—26 grains of sugar to the ounce.

During the next month he had two attacks of sudden and violent

sickness of stomach, accompanied with constant vomiting and cramps in the abdomen and legs. He complained, for a few days, of great nausea, and felt as if saturated with sugar; everything, he said, tasted sweet. He was, at the same time, weak. The urine was of a specific gravity of 1044—not lessened in quantity. The ulcer of leg was healed. The sugar treatment was discontinued.

After the lapse of a few days the sugar was again resumed; and his condition, at the end of another month, was as follows:—His weight, 12 stone 11 ℔.; consequently he had gained nine pounds since last report. His urine is reduced to three quarts in 24 hours; and he is not disturbed more than once or twice to pass it during the night. His skin is moist; his bowels are regular; he has gained strength, for he is able to work at the force-pump of the hospital for an hour without resting. The specific gravity of the urine is 1035–9, but it contains a *greater amount* of sugar than before. According to Garrod's glucometer each ounce contains 40 grains of sugar. His appetite and thirst have decreased; the ulcer of the leg has broken out again.

After four months stay, he left the hospital in the month of May, and obtained employment as a porter, which obliged him to carry considerable weights; he remained at this work for six months, during which time I saw him occasionally; but at the end of that period he was completely prostrate, and sought relief in another hospital. As the sequel of his case has been published, I will add some extracts from the report:—

He was admitted into Dun's Hospital, under the care of Professor Law, in the month of January, and was then voiding 16 pints of urine in 24 hours—specific gravity 1042. On the 10th of February the quantity of urine was 12 pints—specific gravity 1035–9, and contained 8·750 grains of sugar, or about 45½ grains to an ounce. On the 8th of March the quantity of sugar was 39 grains to the ounce, the amount voided being the same. On the 20th March the quantity of sugar declined to 34 grains; and on the 8th May the urine was reduced to 10 pints; there were 38 grains of sugar in each ounce.

He left the hospital in July; but was again readmitted late in October, in an advanced stage of phthisis; and on the 10th November the *post-mortem* examination showed extensive tubercular disease in both lungs. "Both kidneys were very large; one weighed 12½ ounces, the other 11. Both were much congested, but exhibited no trace of disease or deviation from their normal struc-

ture. The liver was perfectly normal in size and appearance; and, on examination, did not contain a trace of sugar. It was, in fact, to the eye and to chemical analysis a specimen of a healthy liver."

It will be seen from these cases in which the saccharine treatment has had a pretty fair trial that, to say the least, it produced no permanent improvement. The specific gravity of the urine was not altered, and in each instance its saccharine quality was aggravated. Tis true the amount of urine voided within a given period was considerably diminished; but I think that result is very much within the control of the patient, exclusive of medicine. I mean, of course, if he checks his desire for fluids. The gain in weight and the increased strength may be more justly attributed to other causes than to the amount of sugar taken; and I am quite satisfied, so far as my observation enables me to judge, that the saccharine treatment of diabetes is not entitled to the credit which its advocates claim for it. All that can be said for it is, that it is vastly agreeable to patients, and is not positively injurious, as one might *a priori* be inclined to suppose.

Art. XII.—*On Cellular Polypus of the Ear.* By J. G. Hildige, F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary.

The class of aural polypi comprised under the term "cellular" has not, until a comparatively recent period, been specially noticed by writers on aural surgery. As such polypi differ essentially from all others occupying the external meatus of the ear; and, as they require a totally different treatment, perhaps some remarks concerning them may not be deemed wholly superfluous.

According to my own observation they occur most frequently in persons of a weak anemic constitution, who are obliged to pass most of their time in ill-ventilated rooms, or lead sedentary lives. They may occur almost at any time of life; but, as a general rule, seldom make their appearance after 24 or 25 years of age. They commence insidiously. The patient may have had a slight attack of ear-ache, to which he may trace the commencement of the tumour, or he may attribute it to an injury; in most cases, however, he knows nothing whatever of its existence until he accidentally inserts his finger into the external meatus, and then detects it. From the commencement of the growth it is almost always

accompanied by a slight discharge, which differs from that produced in chronic catarrhal inflammation of the dermoid meatus by its containing flocculi of mucous like small particles of thread.[a] Little or no pain accompanies this class of polypi, although a pricking sensation is sometimes complained of; but this is generally so trifling that it causes little or no inconvenience to the patient.

According to some writers, these tumours are most frequently attached to the superior or posterior walls of the meatus; and when seated near the orifice, sometimes completely close it up. They are soft and yielding to the touch; and by using a very slight degree of pressure can be reduced to nearly one half their size; if the pressure be continued for any length of time fainting and insensibility are produced; so that in all probability it was this class of tumour which ancient writers[b] described as having their origin in the brain. The following case, recently under treatment at the National Eye and Ear Infirmary, presented almost all the characteristics of the cellular polypus, although the situation and size of the tumour differed materially from the generality of such cases:—

George K., aged 22, clerk, a pale, unhealthy-looking young man. He states, that six months previously he had an attack of ear-ache in the right ear, which subsided after a few hours' duration, without any particular treatment having been had recourse to. Ever since that time he has been subject to a slight discharge from the ear, with occasional shooting pains, and gradually increasing deafness. About six weeks ago (December, 1861) he commenced to feel as if his ear were plugged up by a foreign body; which sensation continued increasing until he had become very deaf of that ear, and could no longer introduce the top of his little finger into the orifice of the meatus. His general health had lately become much impaired. On examination the ear presented the following appearances:—The orifice of the meatus was occupied by a large cone-shaped polypus of a bright reddish colour, which filled up almost the entire calibre of the passage. It was soft to the touch, and easily compressible. I was somewhat alarmed, however, when, on attempting to push it aside with the forceps, the patient became faint; and a moment or so afterwards he lay down on his back; which position he was obliged to retain for several minutes, until his faintness had passed away. The polypus was attached by a broad, thick pedicle to the anterior wall of the meatus, about one-eighth of an inch from the

[a] Vide Toynbee on the Diseases of the Ear.

[b] Vide Fabrice de Hilden, Itard, &c.

orifice, the lining of which was considerably congested; there was little or no discharge present, nor had there been any for several days previously. The watch was heard two inches from the ear. The left ear was sympathetically affected, a buzzing noise being continually heard in it; the hearing of it was, however, tolerably good.

I attempted to remove a portion of the tumour with the forceps, but was obliged to desist on account of the extreme fainting fits which the slightest interference with it produced; I therefore contented myself by prescribing a solution of acetate of zinc (a scruple to the ounce) to be applied three times daily to the polypus, the meatus to be previously syringed out with luke-warm water. Four days after the commencement of this treatment the polypus had slightly diminished in size, had become of a greyish colour, and the discharge had not returned; hearing remained in much about the same state, although the patient fancied he could distinguish sounds more clearly. Six days later the polypus had diminished so much that, with a little difficulty, an examination of the membrana tympani was made. It presented all the appearances of extreme congestion, being almost purple in colour. The portion of the meatus in its immediate neighbourhood was also much inflamed, and much narrower than in the normal condition. I prescribed leeches, to be applied to the orifice of the meatus, counter-irritation behind the ear, and the lotion of acetate of zinc to be applied to the tumour as before. Under this treatment the polypus rapidly disappeared, and the hearing improved considerably; but, as the patient discontinued his attendance at hospital before he had quite recovered, I was unable to say whether any permanent alteration in the structure of the tissues entering into the formation of the meatus and membrana tympani had taken place or not.

This case differs materially from the generality of cellular polypoid growths; the result of the treatment, however, proved that it was of this nature, inasmuch as astringent lotions have no effect whatever on the vascular or fibrous polypi which occur in the same situation, while they remove, in a very short space of time, cellular polypi.

Mr. Toynbee, in his work on the *Diseases of the Ear*, describes a form of polypus of the external meatus, which he denominates "globular cellular." He says:—"The third kind of polypus developed in the external meatus is the globular cellular species. I have thus named a growth which essentially differs from those belonging to the preceding classes (*i. e.*, vascular and fibro-gela-

tinous). It consists of a single globular mass, perfectly smooth on the surface, and without any appearance of granulation It is confined to the inner fourth or sixth of the meatus, from the upper part of which it is usually developed, and it hangs down like a curtain, wholly or partially concealing the membrana tympani. It is of a deep red colour, is softer than the ordinary cellular polypus, and does not generally attain a size larger than a small pea. The growth usually occurs in children, or in young persons; it is attended by a mucous discharge, which is often very offensive; and the secretion, like that from other forms of polypus, consists of epidermoid cells, which give a milky appearance to the water after syringing; it also contains fine threads of mucous. This kind of polypus may exist for several years without producing any severe symptoms; and it has not hitherto been distinguished from the other varieties of polypus. . . . The aural disease with which the globular cellular polypus is most likely to be confounded is catarrhal inflammation of the mucous membrane of the tympanum, since in some cases of the latter the mucous membrane is of a deep red colour, and so much tumefied that it projects into the meatus for a line or a line and a half beyond the position occupied by the membrana tympani previous to its destruction. On examining the growth by means of the speculum and lamp it is not easy to determine which of the two diseases is present. The examination of the discharge, however, is sufficient to decide the question; for, although in both affections flocculi mucus is present, that accompanying the polypus is composed of small thread-like particles, while that emanating from the mucous membrane of the tympanum presents large irregular-shaped masses, generally of a yellow colour. The history of the case will also usually aid the surgeon in forming a diagnosis, as the globular-cellular polypus ordinarily appears without the manifestation of any very decided symptoms; perhaps the appearance of the discharge is the first indication of its existence; whereas the affection of the tympanum generally originates in an attack of acute inflammation, and often arises during scarlet fever or measles."

With regard to the faintness and insensibility produced by pressure on the tumour, the same writer remarks:—"These symptoms of cerebral irritation frequently cause great alarm to the patient and his friends, and appear to be the result of pressure of the polypus on the outer surface of the membrana tympani and chain of ossicles, which causes a movement inwards towards the cavity of the vestibule of the inner extremity of the chain, producing continuous

tension of the fluid of the vestibules. This is clearly shown by careful inspection of a specimen, prepared by me for that purpose, by which it is manifest that although there are two articulations between the long process of the malleus and the base of the stapes, yet the slightest movement inward of the *processus longus mallei* causes the base of the stapes to be pressed inwards towards the cavity of the vestibule, and, as has been already stated, pressure on the contents of the vestibule appears to produce results very similar to those of pressure on the brain. According to my own observations the former gives rise to—first, a sensation of noises; secondly, confusion of ideas; thirdly, giddiness and insensibility."

According to my own experience surgical interference is contra-indicated in all polypi of this class where there is tendency to extreme syncope produced by handling the tumour, as in the case I have just related. A highly inflammatory action frequently occurs after such interference, not only in the polypus itself. but also in the dermoid meatus, thus rendering an affection, otherwise comparatively harmless, one of a highly dangerous character, from which the most serious results must be anticipated.

In all probability Itard alludes to this kind of polypus when he states—speaking of polypi in general—that it is only after operative attempts to remove it that injurious consequences—the least of which is permanent deafness—generally occur. He also states, however, that all the polypi which had come under his observation appeared to be of the same nature, and suggested extraction as the only means of removing them.

Long anterior to his time Fabrice de Hilden (in 1604) pointed out the danger *occasionally* consecutive to extraction of aural polypi in general; and in one case quoted by Itard[a] the following extraordinary precautions were taken by the first-named writer in order to counteract any inflammatory symptoms that might arise after the operation. The writer says:—"Le traitement de cette maladie ayant eté fixé au retour de la belle saison, on commença vers la fin de Mars à purger la malade. Le surlendemain, application des ventouses aux epaules, et le jour suivant application d'un seton à la nuque. On fit ensuite usage d'une electuaire tonique, d'apozèmes depuratifs, interrompus, par des purgatifs, en même temps qu'on saupoudrait la tête avec une poudre astringente et aromatique dont on garnissait chaque jour la suture coronale avec

[a] Traite des Maladies de l'Oreille et de l'Audition. Par J. W. G. Itard.

l'attention d'enlever auparavaunt celle qu'on avait mise la veille. Apres ces moyens preparatoires on en vint à l'operation." From this it is obvious that the danger of operative interference with *some* polypi of the ear was known to ancient writers on aural surgery, (although the utility of the above preventive remedies may be called in question); and it was most probably the surgical removal of this class of polypi, which I have been attempting to describe, which was attended with unfortunate results both to patient and surgeon.

Art. XIII.—*Observations on Acute Gangrene, resulting from Compound Fracture of the Leg.* By Samuel G. Wilmot, M.D., F.R.C.S.I., Surgeon to Steevens's Hospital, &c., &c.

Of the many evils following from compound fracture of the leg, none demands a quicker perception, or power of keener penetration on the part of the surgeon, than acute gangrene, especially that of the areolar tissue—genuine constitutional gangrene. The signals which give warning of the impending mischief are sometimes so faint as to admit of their being readily overlooked, and it is often not until the evidences are strongly pronounced that the surgeon becomes aware of their full meaning and takes alarm. This disease proves a foe as stealthy as it is deadly, seldom manifesting itself in open action until it has overcome the vital forces, and left no ground on which it can be attacked. To be able to recognise the first dawning of premonitory symptoms; to correctly interpret early and imperfectly developed manifestations, and not to be misled by phenomena, which, however formidable in appearance, are either accidental complications, or only secondary results, and not *immediate* tokens of the fundamental mischief, are absolute requirements, if the surgeon is to be put on his guard in time, and be prepared for an energetic and decisive line of conduct. Nothing but close observation of a number of such cases can give this necessary discriminating power.

We may divide acute gangrene from compound fracture into three *principal* forms. First, inflammatory gangrene, that which results from intensity of inflammatory action, or from pressure exercised by the effused products of inflammation. Secondly, diffused gangrene of the areolar tissue, the skin being primarily, at

least, not implicated or not necessarily so. Thirdly, limited gangrene of the deep areolar tissue, commencing around the broken fragments.

The two latter forms are *essentially* constitutional, the disease depending not on the degree of violence which the tissue has sustained—not on any excess of action in the part, but on the result of some *vice* or unsoundness of the constitution. To these two forms I shall confine my remarks.

The first kind of constitutional gangrene—the diffused gangrene of the areolar tissue—is comparatively easy of recognition, even in the early stage. The wound on the fourth day, instead of suppurating or exhibiting a tendency thereto, assumes a sloughy aspect, and very quickly a doughy swelling arises around it, which soon crepitates on pressure. The emphysema, preceded by doughy tumefaction, rapidly extends to the knee, and there are few instances in which it does not break through the temporary barrier set by the knee-joint, and running along the course of the femoral vessels, reach the groin. Indeed, I have never seen an instance in which more or less crepitation could not be detected along the line of the femoral vessels, and in very bad and rapidly fatal cases, if there be not actual emphysema much above the groin, the peculiar doughy tumefaction which precedes it is sure to be found over the same side of the abdomen, as high as and even higher than the level of the umbilicus, and passing round to the back.

The gangrene is *essentially* of the areolar tissue, and it may engage the whole of this structure in the limb, or, as is usually the case, only or principally the subcutaneous portion. The skin, for some extent around the wound, frequently dies, but this is no necessary part of the gangrenous action, and never does the sloughing of the integument exhibit the same extent or degree as is observed in ordinary inflammatory gangrene, which involves both skin and areolar tissue at one and the same time. The most striking appearance presented by the limb—almost a characteristic feature of diffused gangrene of the areolar tissue—is a peculiar mottled marbled hue of the skin, especially of that in the vicinity of the wound.

The constitutional symptoms which correspond with the development and spread of the local mischief, are equally formidable and rapid in their course; indeed, long before the disease has extended to the abdomen, the patient becomes utterly prostrated, fatal signs are manifested, and all hopes of saving his life cease. The rapid succession of the local changes, and the readiness with which the

system yields as they advance, render it a matter of extreme difficulty to resort to amputation with any prospect of success. The spread of the local condition on the one hand, and the progress of the general condition on the other, rarely leave a moment available for operation.

Much confusion, and, consequently, uncertainty, in determining the question of amputation in *all forms* of spreading gangrene, have been created by the fact that exactly opposite opinions have been advocated by two equally eminent authorities—Mr. Pott and Baron Larrey—the former laying it down as a law that amputation is inadmissible, unless the gangrene has ceased to spread; the latter inculcating the rule of operating, even though it be extending with rapidity. Most civil surgeons have ranged themselves on the side of Mr. Pott, while military surgeons have, almost invariably, been governed by Baron Larrey's practice. My own experience leads me to espouse Larrey's rather than Pott's view of the question.

Not to operate until the gangrene has been arrested, and the fever has abated, is *apparently* a sound practice; but where is the case of acute traumatic gangrene, whatever its kind or form, in which these two happy events ever occur; if we wait in the vain hope of seeing these expectations realised, we wait to see pass by the only possible moment at which amputation can be satisfactorily performed. To wait watching for the arrest of the gangrene, and, finding the advanced stages of the disease rapidly supervening to rush to the knife, is a course not to be justified, for it can never be attended with successful results.

If amputation is to succeed, it must be performed above the knee and in healthy structures, and the strength must not, as yet, have been far prostrated. To cut through emphysematous structures, and especially to operate when the pulse is irregular, or fluttering, or intermittent; when there is hiccup or other evidences of approaching dissolution, is an act little short of homicide; it is but to add to the sufferer's miseries, and to precipitate his death. It is true that cases are recorded by military surgeons in which, owing to the disease having spread so high, it has become necessary, in the operation, to carry the knife through gangrenous parts, and yet the measure has been attended with success; but these, and all like instances, are not, I feel convinced, examples of the special gangrene to which I have been alluding.

It is not long since my colleague, Dr. Hamilton, was called on to amputate in a case of gangrene of the arm, where there were

tumefaction and crepitation beyond the shoulder-joint, and though the parts cut through were *almost, if not altogether* gangrenous, the patient recovered in the most satisfactory manner. But this case was an example of gangrene arising from a mechanical cause—extensive subfascial extravasation of blood, leading to extreme tension, and consequent arrest of the circulation in the tissues. Here, as also frequently occurs in the case of ordinary inflammatory gangrene, a tumefied and emphysematous condition of remote parts resulted, on the one hand, from passive effusion of the serum the consequence of congestion,—on the other, from the travelling of air along the cells of the areolar tissue from the structures undergoing decomposition. The remote tissues themselves are, therefore, not the seat of actual disease, and are in consequence capable of taking on full reparative action after being divided by the knife.

The case is, however, very different in the form of gangrene, the subject of the present remarks. In it the tumefaction of the areolar tissue, in parts ever so remote from the seat of fracture, is of that peculiar doughy nature, which is an unerring indication that the first step in the process of local death has been made, and the emphysema, which quickly follows, is due to the generation of air in that part of the tissue, and not to its transmission from the parts below.

It follows, then, that in acute diffused gangrene of the areolar tissue following compound fracture of the leg, amputation cannot be resorted to with any solid prospect of success, unless it be performed above the knee, and before the parts there have participated in the gangrenous action, and also before the vital powers have commenced to give way. To hit off this happy moment—this pause in the storm so to speak—is not easy; but, unfortunately, even where we are able to avail ourselves of the desirable period, amputation holds out a meagre chance for the patient. For the gangrene is *constitutional;* we, therefore, can have no pledge that the disease will not attack the stump, and we have reason to fear that the system will sink under the effort it is called on to make in the endeavour to establish the necessary reparative action.

Yet amputation, when the proper period for its performance can be seized, is not only a justifiable, but a desirable measure, since it offers the only possible chance of safety to the patient.

The second kind of constitutional gangrene—limited gangrene of the deep areolar tissue commencing around the broken fragments—is that to which I wish more especially to direct attention, as it

appears to me either to be in great measure overlooked, or not to be clearly distinguished from the form just described. Yet the two examples differ not only in local character, but in the mode of death, and also as to the version to be given to the question of amputation. It is in a case of this disease, that the possession by the surgeon of those qualities already alluded to is so essential. The disease makes its progress so stealthily, though rapidly, and not until far advanced causing any alarming disturbance of the system, or any very broadly marked local change, that the unobservant or inexperienced practitioner may be completely deceived, and fail to recognise the real state of the case before actual fatal symptoms are pourtrayed. Death is produced by poisoning of the blood from absorption of putrid serum, and this event is quite compatible with a very limited extent of gangrene.

The earliest notice that this kind of gangrene has commenced is given by the wound, on the third or fourth day from the receipt of injury. The lips pout, are thick, and present a peculiar waxy appearance, and along their margin a narrow vesication arises There is no suppuration, and the parts would be perfectly dry, if it were not for the escape of some fetid brown serum, which wells up from between the broken fragments. This condition of the wound is certain evidence that gangrene, of the areolar tissue around the broken fragments, has set in. At this period there is but little general disturbance; the pulse ranges from 80 to 90, soft and full, and the patient does not exhibit signs of much prostration; the constitutional character, however, of the change that has commenced is shown by the jaundiced hue of the skin and conjunctiva, which is always apparent, and the irritability of the stomach, accompanied with sour eructations. If the patient has previously been dyspeptic, these symptoms are apt to be ascribed to the old disorder of the stomach, or to the free use of liquids, in which his thirst induces him to indulge, and thus one source of deception is created.

In less than 24 hours from the supervention of the symptoms just described, the patient's fate is decided. Sometimes suppuration soon sets in, and the slough of areolar tissue escapes with the pus, or through the medium of an abscess formed in some part of the limb; all then goes on satisfactorily. Usually, however, this happy change does not occur; the wound opens out more, the lips become further everted, a bluish line is perceptible where the vesication had existed, and the fetid serous discharge increases, in some instances,

to such an amount as to saturate the bandages and the bed. As these changes proceed the patient complains of less pain, until at length it is altogether absent. The most striking local feature now, and one which makes the case contrast with the form of gangrene last described, is the total absence of any doughy tumefaction; indeed, from first to last, there is neither tension nor swelling of any kind, save some puffiness around the wound, and even crepitation, which can only be elicited by very firm pressure, is not always present. No sloughing of the skin, beyond, at least, the margins of the wound, or what may be the result of the previous mechanical violence, is ever observed in uncomplicated cases of this kind of gangrene. The appearance of the wound and fetid serous discharge at first, and later the constitutional symptoms, are the only means whereby we can recognise sloughing of the deep areolar tissue, and the consequent blood-poisoning.

At the time that the wound, by the fuller development of those characters first observed, gives unequivocal proof that all hope of suppuration occurring is at an end, and the gangrene is spreading, the constitutional symptoms undergo a serious change, and evidence is quickly afforded that the blood has become poisoned to a fatal extent. The pulse, before soft and full, and not exceeding 90 beats in the minute, becomes quick and weak; the vomiting is incessant, being accompanied by hiccup, or, what is worse, a sort of gulping effort; there are insatiable thirst, a dry brown tongue, and a tympanitic state of the abdomen. The yellowness of the skin gains a deeper tint, the features are contracted, and there is a peculiar sunken expression of countenance; the point of the nose, the lips, and one or more other spots on the face, especially over each malar bone, present a congested appearance, and this, mingled with the general yellowness, gives that remarkable leaden hue which was so much looked to by the older surgeons, being considered by them as characteristic of gangrene. As time goes on the fatal symptoms advance. The pulse becomes irregular or intermittent, the patient falls into a cold clammy sweat, he complains of a sense of constriction across the precordium, which is sometimes most distressing; there are jactitation and muttering delirium. Yet when roused he will, in general, answer questions rationally, and is often able to raise himself in bed and take some drink, thus evincing a degree of strength, which inspires false hopes in those incapable of drawing conclusions from the local and general condition of the case. Soon, however, coma comes on, and in a couple of hours closes the scene,

not more than 36 hours having, as a general rule, elapsed from the first announcement, given by the wound, that gangrene of the areolar tissue around the broken fragments had commenced.

The most characteristic local feature, apart from the aspect of the wound, is the absence of swelling, the limb being, to the last, rather soft and flaccid than otherwise, and those of a general character are the incessant vomiting, the yellowness, and later, the leaden shade of the skin of the face, and the abruptness of the supervention of fatal symptoms. In the diffused gangrene death supervenes rapidly, but the transitional steps are comparatively gradual; in the form of gangrene, however, now alluded to, the succession of fatal symptoms, once the blood becomes fully poisoned, is so sudden and abrupt as to take all parties by surprise.

With respect to amputation in this form of gangrene, the question is to be viewed in a particular light. In the diffused gangrene we saw that so long as the vital powers did not sink below a certain point, and the knife could be carried through structures not actually in the process of dying, amputation was a proper measure, and afforded some grounds for expecting a successful result; but in the case of gangrene of the deep areolar tissue, the operation is worse than useless, unless as a *measure of anticipation*, for it is obvious that once the general symptoms give evidence of thorough poisoning of the blood, removal of the source of the mischief comes too late. Yet, to operate before all chance of suppuration being established and the gangrene arrested has passed, would be most unjustifiable: hence closer watching and greater preparedness are called for. After the wound has made the first declaration that sloughing has commenced, however feebly the signs may be manifested—however slight the change—the greatest vigilance is demanded from the surgeon; and if, in a short time, the local features should be more strongly marked, and the pulse become quicker and weaker, and the irritability of stomach continue, we should, without delay, resort to the operation. By temporising we only give time for the morbid poison to be absorbed, and to produce its deadly effect upon the brain and other vital organs. Still, even though the operation be performed at the most appropriate moment, the chance of success it offers is so indifferent as to make it imprudent for the surgeon to urge it too strongly upon the patient or his friends, should he or they exhibit much hesitation in yielding consent.

The inquiry that now arises is this:—Are there any means which the surgeon can adopt calculated to avert or to diminish the risk of

either of these forms of gangrene supervening? I believe a most essential point is to reduce the bones as speedily as possible, making the ends smooth and even, and coapting them perfectly. In all cases where the bone protrudes, whether from direct or indirect violence, the end is always jagged and irregular; and it is obvious that the effort to effect reduction, and the injury done to the areolar tissue by the rough spicula after the bones are returned, must greatly increase the chance of gangrene of that tissue ensuing: hence it is almost always necessary to saw off some portion of the broken fragments, either with the view of facilitating reduction, or of rendering the extremities smooth and even, or of effecting both purposes.

The quantity of bone to be removed depends on the extent of the protrusion and the spiculation of the ends. We should have them smooth and fairly coapted, no matter how much it may be necessary to saw off; far better is it to allow the limb to be permanently two inches short than to expose the patient to the remotest chance of gangrene of the areolar tissue. Nothing can be more unsurgical, and more likely to lead to all the evils consequent on compound fracture, than making violent traction to accomplish reduction of the bones, when the removal of a small piece of the bone, by means of a saw, would enable the fragments to fall into easy and perfect apposition. The best sort of saw to employ is a small one, on the principle of Mr. Butcher's, the serrated edge being turned upwards, so as to saw the bones from below upwards; thus the soft parts are defended without any of the stretching, and the trouble consequent on the use of clumsy retractors. As the lower fragment seldom protrudes, and is overlapped by the upper, it is often difficult to get at it satisfactorily, so as to take off a sufficient portion of bone; but in general, by means of the saw alluded to, and a good cutting forceps, all spicula and roughnesses can be removed.

The bones being rendered smooth, and properly coapted, the limb must be left as tranquil as possible, and the disturbing action of the muscles must be controlled by mechanical means and by anodynes. There has always been much difference of opinion as to the best mode of placing the limb; but this consideration depends altogether on the exact situation of the fracture, and its direction. If the fracture be in the lower third of the bones, and be oblique from above and without downwards and inwards—assuming that the ends have not been removed, or not to a sufficient

extent to render them transverse—the old plan of laying the limb on the outside, with the knee flexed, is the best, often the only, means whereby the bones can be kept in apposition. But should the line of the obliquity be from above and behind downwards and forwards, the limb must rest on the back; and for this purpose the swinging apparatus is most desirable. The latter is the position which, in all cases, must eventually be assumed; for, should the limb be left long on the outside, with the knee flexed, not only is there much pain to the patient, and trouble and difficulty to the surgeon in straightening the joint, but the suppuration which so frequently occurs in the sheath of the muscles on the outside of the leg is apt to escape notice until a large abscess has burst either above the outer malleolus or below the head of the fibula. The position of the limb opposes the escape of the pus from the wound, it therefore gravitates to the bottom, leading to a lodgment there, thus favouring the formation of the large abscess alluded to. A fortnight is long enough to leave the limb in the flexed position; at the end of that time muscular action and the mobility of the bones will be lessened so as to admit of the fragments lying in tolerably good apposition when the limb is placed on the back.

Seeing that both forms of gangrene are purely constitutional, it follows that, as a matter of primary importance, strict regard should be paid to every circumstance contributing to the general health. If the patient's residence be in vitiated air, he should be removed therefrom, as soon as possible, after the accident; and, under any circumstances, his room should be well ventilated, free admission of pure air being secured Of all influences exercising a depressing effect on the system, and thereby predisposing to gangrene and low forms of inflammation, none is more powerful than impure air. Many persons will apparently enjoy good health in abodes where the air is not only stagnant but impregnated with foul gases; but when such become the subjects of injury, especially of wounds and cuts, then the evil is to be witnessed either in the supervention of erysipelas or of gangrene, or in the utter failure of reparative action. How often do we find the one result averted and the other corrected by changing the individual into pure air.

Next in necessity to free circulation of pure air in lessening the predisposition to gangrene is the supporting the patient's strength, from the starting point, by nutriment, wine, and tonics. In injuries of all kinds the practitioner is apt to withhold these measures until actual debility demands them; but in every instance where

gangrene or low forms of inflammation are to be apprehended we must, from the commencement, deal liberally with the case, especially as regards wine. Of medicines, the sulphate of quinine is unquestionably the best.

ART. XIV.—*Commentaries on Diseases of the Heart and Vessels.* By ROBERT D. LYONS.

THE following observations will, I trust, be received with indulgent consideration. Their object is to discuss, not in set manner or in systematic order, some points which appear to me of practical interest and importance in the pathology, diagnosis, and treatment of certain forms of disease of the heart and great vessels.

Irregular and Intermittent Heart and Pulse, without Discoverable Organic Disease.—The phenomenon here indicated I have had occasion to observe in youth, in adult, and in old age, in connexion with acute as well as with chronic disease, and also in conditions of the system in which no other lesion was present.

I have observed the following amongst other instances of irregular cardiac and vascular action:—

1. A state pretty common in persons of 60 years of age, and upwards, in which there is momentary arrest of the cardiac and radial beat once, perhaps, in a minute, and this at certain intervals in the day, and not observable at all times. During confinement to bed, from trivial and temporary ailments, especially those affecting the chest, this phenomenon becomes more constant. It often then recurs twice or three times in the minute, and is followed by a peculiar hurried action of the ventricles for three, four, or half a dozen beats. The momentary cessation of the cardiac action is in some patients sensible to themselves, is attended by a thrill of apprehension through the whole system, and is often the cause of much anxiety and distress of mind. I have, in some well marked cases of this affection, observed the presence of very fully developed *arcus senilis* around the cornea. So far I think this supports the assumption that the irregular cardiac action in question is due to a weakened, flabby, and probably fatty condition of the ventricles. It may be further noticed, that in cases of this kind the heart's action is very much influenced by the respiratory movements Thus

a sudden cough, or an unusually deep inspiration, or any sudden check to either the inspiratory or expiratory effort will be sufficient to cause an immediate, but momentary, arrest of the heart's beat and the radial pulse.

The practical therapeutic indications which I think derivable from the consideration of these phenomena are to avoid lowering and depleting measures when such patients are affected with subacute bronchial, or other pulmonic lesions; and, on the other hand to fortify the system, and the heart especially, by nourishing broths and a liberal but judicious use of stimulants.

2. A state in which, in persons of adult age—30 to 40—irregular action of the heart, with momentary cessation of its beat, occurs in the condition of physical and nervous prostration which supervenes to that of inordinate excitement maintained for ten days or a fortnight at a time by excessive indulgence in alcoholic drinks. One of the most marked instances of this kind which I have met with was recently under my observation. There was great sense of depression, collapse, and weakness referred to the cardiac region, the patient putting his hand upon the heart, and saying, "It is all there." The cardiac impulse was found to be feeble, the rate of circulation from 65 to 70, and the first sound weak. A cardiac pause occurred at about 15 to 20 beats for two or three days; it then became more irregular, and occurred once or twice in every two or three minutes; subsequently it occurred only during part of the day, towards evening, when the patient's system ran down; gradually this symptom disappeared. The same patient, on several previous occasions, after excessive abuse of alcoholic drinks, complained of great cardiac sinking and depression; but the heart and pulse never before exhibited the phenomenon of momentary interruption of its beat.

I have, in several instances, noticed the connexion of dipsomaniac indulgence with great languor and debility during portions of the day —usually the afternoon—coupled with cardiac depression and feelings of a hypochondriacal character, and with melancholy forebodings. The circulation is, under these circumstances, found to be languid, the heart's action feeble, the sounds dull, and wanting "tone" and "ring;" and the pulse at the wrists is readily compressible, and wanting in resiliency.

I feel persuaded that this train of symptoms is connected with incipient fatty degeneration of the muscular structure of the heart. Bracing air, tonics, the preparations of iron, animal food at frequent

intervals, and moderate stimulation, especially by such wines as those of the Burgundy vintages, which fortify and invigorate without producing excitement of the circulation—are the remedies which I have found most beneficial. By such means I have no doubt that cardiac degeneration can be arrested.

3. Another, and more singular, form of cardiac irregularity is that which I have found to occur in persons of advanced age. The pulse is slow—at or under 40 in the minute; it is a long, slow, and labouring pulse-wave, which lingers under the finger, but is altogether devoid of resistance or force, and can be completely extinguished by slight pressure. The cardiac impulse is extremely feeble; but it is on applying the stethoscope that the most marked phenomena are discovered. The rhythm of the cardiac sounds is altered; and, instead of a double sound, we may find a treble or quadruple sound. One very well pronounced example of this affection came recently under my notice. The patient was aged over 70 years, a female. The pulse at the wrist was hardly 40, and this seemed its permanent rate. The cardiac impulse was very feeble; and, on applying the stethoscope, a distinctly triple rhythm of the heart's sounds was audible. This, be it observed, was not a temporary or momentary condition, but one which we found, after repeated examination, to be, so to speak, the normal state of the heart's action in the patient.

I conclude this case to be another example of weakened and probably fatty heart. The occurrence of treble, and even quadruple, sounds attending the heart's beat I think admits of ready explanation by a want of synchronism in the action of the several *pairs* of the parts of the heart which, we know, usually perform their motions together. Thus, if the ventricles do not contract at precisely the same moment we have doubling of the first sound; if the great vessels, aorta and pulmonary artery, do not react on their contents at precisely the same instant, reduplication of the second sound will be the result.

We know that, under the influence of nervous excitement, in young females, in certain chlorotic states, and even in males at or about the age of puberty, and under other conditions not well defined, a triple rhythm of the heart's action is occasionally induced. It is in these instances, however, but a transient and temporary phenomenon, and disappears under treatment.

Feeble Heart, with Hypochondriacal Symptoms.—Another class of cases may be now noticed. They occur, so far as my observations

extend, chiefly in individuals of rather full and plethoric habit, and who are supposed to be in robust health. They are usually persons in the prime of adult life, 30 to 45 years of age, rather over than under the middle height, well coloured, of energetic minds, and at one period of their lives, if not actually so when under observation, of vigorous frame, and capable of undergoing much physical exertion. The appetite is usually good, and the various functions of the body are performed with regularity. What, it may be asked, are or *can be* the ailments of persons apparently in such rude health?

When individuals, in the circumstances now under consideration, make known their complaints it is not unusual to find them treated by their friends as "fanciful," "hippish," or "indolent;" and so much do appearances belie their statements that they are not always accorded sympathy, still more rarely entire credence. And yet their ailments, and I may even say their sufferings, are as real, and occasionally as severe as those which occur in disease of a less questionable character.

In these cases it will often be found that the patient complains much of general debility, with total prostration of nervous energy, and sensations of great weakness, sinking, and even collapse—the latter chiefly referred to the cardiac region. There is much hypochondriac feeling, with morbid forebodings, and an irresistible melancholy seizes upon the mind, which it is found impossible to shake off by any effort of the will. In some patients these symptoms prevail during a great part of the day, and constitute an aggregation of misery and distress that eventually becomes almost intolerable. In other instances it is only in the latter half of the day that the patient's system runs down, as it were; or, as it was on one occasion very strikingly illustrated to me, the patient feels as if the system were like a piece of clock-work, wound up and set to go for a certain number of hours, during which nervous and mental energy were well sustained, and physical exertion, even of considerable amount, could be well borne. A moment seemed to arrive, however—in this instance about one o'clock in the day—"when the weights had run down," the clock-work ceased to go with its previous energy, and the patient, feeling the nervous system all unstrung, and the muscular apparatus feeble and relaxed, was no longer capable of voluntary exertion of the will or mind to the full extent of their powers. Feelings of melancholy, depression of spirits, sighing respiration, disposition to lie down, and, in some instances, a heavy sleepy state supervene. In some cases recourse is secretly had to the use of stimulants, from

the knowledge which the patients have, by experience, acquired of their efficiency in, at all events temporarily, relieving the state of wretchedness and depression into which they are accustomed to sink at a particular hour of the day.

The heart's action and pulse are usually, in these cases, very feeble, the radial pulse being "shabby" and "thready." There is manifestly an incomplete and inefficient circulation of blood, due, I think, primarily to a weakened and atonic state of the ventricles, and possibly, at a subsequent period, to incipient fatty degeneration.

Change of air, horse and foot exercise in a bracing climate, a tonic regimen, frequent use of broiled meats, an early and light dinner, avoidance of succulent vegetables, the moderate use of brandy rather than whiskey, properly diluted, and the more tonic and invigorating wines of the Burgundy rather than the claret vintages, I have found to be attended with most excellent results. In many of these cases there is a mechanical as well as a physical connexion and dependence manifested between the stomach and heart. The state of collapse above described is generally found to occur about the time that the stomach is empty and idle. A small quantity of broiled meat, with a glass of Macon, Beaune, Volnay, or other tonic Burgundy wine at this period of the day will be found an excellent stimulant to the heart as well as to the whole system. The bitter vegetable infusions, with or without the preparations of iron, are also indicated; while in many cases the ammoniated tincture or the infusion of valerian, given in effervescence three or four times a day, will be found highly beneficial.

These cases, if neglected, have unquestionably a tendency to run on into confirmed fatty degeneration of the heart—a full development of which state may be anticipated between the 50th and 60th years, if not earlier.

Aortic Murmurs.—In young and otherwise healthy persons, males, at or about the age of puberty, I have in several instances observed murmurs referrible to the ascending portion of the aorta, and in point of time following, with a slight but appreciable interval, on the ventricular systole. The individuals in question appeared in the enjoyment of fair average health, being well nourished, well coloured, and in no respect anemic or chlorotic, and of vigorous, if not robust frame. In some instances the murmur was detected in consequence of an examination of the heart being asked for by reason of slight palpitation and distress in the precordial region.

In other instances I have become aware of the presence of this variety of murmur, under circumstances which called for a general exploration of the chest, but in which no suspicion was entertained by the patient himself that anything abnormal existed in the action of the heart or vessels. The murmur has been usually of a somewhat rough blowing character. I have found it limited by the aortic valves, and in no instance diffused in the direction of the ventricles. I have more than once known it to be scarcely audible till the stethoscope was passed an inch or more above the level of the sigmoid valves. Its point of maximum intensity was about the junction of the middle and upper third of the sternum; and, though audible at the top of this bone, it was but faintly propagated into the carotids. The ascending portion of the arch of the aorta and its contained blood must be interrogated for the cause of this murmur. The integrity of the valves of the aorta seems to me to be guaranteed in these cases by the faintness, and, in some instances, absence of the abnormal sound at the "cardiac centre," and the purity and clearness of the second sound in this situation in all the cases that I have observed. Spanemic and chlorotic states of the blood I have judged not to exist, from the well-nourished condition of the body, and the florid colour of the face and surface generally.

In persons of more advanced age atheromatous states of the aortic walls, with or without calcareous degeneration of the inner coat, and the production of the so-called "osseous" plates will readily account for murmur localised in the aorta, and unattended by abnormal valvular sound. It is well known to pathologists that even in very advanced states of degeneration of the walls of the aorta, extending to within a very short distance of the origin of the vessel, the semilunar valves will often be found in a condition of perfect integrity, retaining their transparency, and being in every respect adequate to perform the office of closing the mouth of the aorta, and preventing the return of the blood into the ventricle.

But though atheromatous change is possible, it is certainly of great rarity prior to, at, or shortly subsequent to puberty. I think we may even assert, in general terms, that *atheromatous disease is of exceptional occurrence prior to the thirtieth year of life.* (I have, however, myself seen well marked exceptions to this rule.)

It becomes a question of great nicety, as well as of much practical importance in reference to prognosis, to determine the nature and source of murmur in the class of cases in question. If of organic origin, and dependent on atheromatous degeneration of the aortic

walls, we can at best but anticipate slow aneurismal dilatation of the primary arterial trunk, with the probable formation of a fusiform "true" aneurismal tumour in the chest by the time the patient reaches his fortieth or forty-fifth year. In the interval he runs the risk of rupture of the more inelastic *atheromatised* inner, and middle coats of the aorta, as the result of any unusual strain the vessel may be subjected to by blows upon the chest, violent muscular exertion, forced respiratory efforts, or other agencies of similar effect. Rupture of the coats of the vessel will, of course, be speedily followed by the formation of "dissecting" or "false" aneurism, a diseased state which, under the most favourable aspect, is incompatible with a protracted duration of life—far less so, as will be subsequently shown, than in cases of "true" aneurism.

To put the problem in question in a definite and concrete shape before us we shall pose it thus:—

Given—A youth, from 17 to 25 years of age, well formed, of medium stature, build, and weight, well nourished frame, and well coloured complexion, with every evidence of well arterialised blood, and all the functions discharged in a healthy manner, the circulation being tranquil, or but slightly disturbed. It is desired for any of the reasons, half social half commercial, so numerous in the present day—to insure his life for a liberal sum. The most careful general exploration gives no evidence of disease, with the exception of a rough, blowing murmur audible in the aorta, not heard at the cardiac centre, but more or less audible in the carotids. Whether is the examining physician to recommend for insurance or to reject such a life?

It is unnecessary to dwell on the important issues at stake, and the responsibility that attaches to the verdict of the medical practitioner under these circumstances. And be it remembered that they are circumstances in which compromise of opinion is impossible. He has but one alternative—to reject or to recommend the life. Now I believe that, guided by precedent, and by what may be deduced from systematic works, the life in question would be rejected in the majority of instances. And yet I am persuaded the decision would be an incorrect one.

Besides others that have come before me at various periods, I have more recently had the opportunity of observing not less than five cases of this affection. The murmur is well marked in all; in all the limits of its diffusion are those above assigned; and in all the frame is well nourished, and the blood well oxygenated; in two

there is, or rather was, for a time, slight palpitation and some slight cardiac uneasiness; but in none of them is there the slightest abnormal sound, or action in the heart itself. In some instances I have known the murmur to disappear altogether in the progress of the case.

In the five examples now cited the murmur remains, and therefore they may be considered still *sub judice.* I have myself, however, acquired the strongest conviction that in no single instance out of the five is the murmur dependent on atheromatous or other organic change in the walls of the aorta. This conviction I base on the following considerations:—

(*a*). The youth of the patients.

(*b*). The absence of pain, distress, or uneasiness, referrible to the aorta in the majority of cases.

(*c*). The tranquil state of the circulation.

(*d*). That I have known the murmur to disappear in similar instances previously observed, the action and sounds of the heart and aorta being perfectly normal.

Obstructive Disease of the Aortic Orifice.—In this important form of lesion of the heart the usual phenomena are those of impeded circulation, systolic murmur propagated into the aorta, cardiac distress and palpitation, and finally death, from the effects of imperfect circulation, venous congestion, secondary engorgement of the lungs, liver, and kidneys, and dropsy in the extremities or the great cavities. It cannot however, I think, have escaped the notice of observant physicians that cases agreeing in the acoustic phenomena, and therefore, and justly so, classed alike as instances of aortic obstruction, differ very widely in duration, in the amount of suffering entailed, and in the general state of the patient's health and fitness or capacity for the ordinary avocations of life. In some of these cases a fatal issue ensues after no long interval, and with much suffering; in others, as in the following instances, a comparative state of health and physical comfort is long maintained.

One of our dispensary cases at Jervis-street Hospital exemplifies in so striking a manner the principles involved in our first and second propositions, that I think it will be useful to consider its features somewhat in detail. Several of our pupils recently examined the case of Mrs. M., amongst our out patients, at that institution. She is a *healthy-looking*, fresh-coloured woman, of middle stature, comfortably clad, the wife of an artisan, in moder-

ately easy circumstances for his position in life. It is worthy of remark, that this woman sought advice for a trifling derangement of the stomach, with foul tongue, and of recent origin. She made no complaint or reference whatever to her heart till she perceived, after she had explained her gastric symptoms, that I did not identify her. I had, however, recognised her face as one perfectly familiar to me. She then mentioned her name, and the fact of her having been under my care for "Heart Disease" two years and a half previously. This brought her case, with its history, symptoms, and pathology to my mind in all its vividness. Fresh inquiry elicited a repetition of her history, to the effect that some seven years since she had an attack of rheumatic fever, subsequent to which she complained of heart affection. At the period of my last seeing her, two and a half years since, she went to the country for change of air, by my advice, and she has since not only enjoyed very fair health, but has borne another child, now just weaned. She is perfectly aware that she has "the Disease of the heart," as they generally term all cardiac affections. She suffers but very slightly, and that only occasionally.

Now let us see what are the stethoscopic signs in this case. I examined her with much care and interest, and many of the pupils can confirm the observations then made. The pulse at the wrist was regular, and in no way remarkable for excess or deficiency of force or volume. The cardiac impulse is full and sensible over an increased surface of moderate extent; the precordial dulness is likewise increased in extent to a moderate degree. On applying the stethoscope a very loud whirring murmur is audible with the first sound of the heart, or rather replacing or drowning it. This murmur is very intense, much louder than in any of the other cases at present under observation. It is audible from the apex to the base of the heart; it is propagated up the line of the aorta, and is heard at the root of the neck and in the carotid arteries with great intensity; it can be traced as a very loud sound, and still of a whirring character, in the descending thoracic aorta; it is audible between the scapulæ and over the last dorsal vertebræ; it is heard, almost with the same intensity, in the lumbar region; and it is perfectly audible and distinct when the stethoscope is carried to the lower end of the sacrum. And it is to be borne in mind, that in this case our examination was made through the numerous and thick folds of a female's dress. I have no doubt that the murmur is audible in this patient in the iliac and the femoral arteries, and

perhaps through the whole arterial tree. Now, note again the remarkable features of this interesting and instructive case. The patient makes no complaint of heart symptoms; she has for two years and a half enjoyed average health, with freedom from cardiac distress, except at rare intervals, and she then suffered but little. There is little, if any, disturbance of the equilibrium of the circulation. Not only have the functions generally been performed with every indication of integrity on the part of the great organs, but she has safely gone through that most wonderful of God's operations performed in the human economy, viz., that of child-bearing, and the subsequent process of suckling her child.

Taking it all in all, there will rarely be met with a case more full of interest and instruction.

From the fullest consideration which I have been able to give this case I regard it as an instance of obstructive disease at the mouth of the aorta, the result of vegetative growth in the semilunar valves, which offers a certain amount of impediment to the egress of the blood from the ventricle into the aorta, by which it is thrown into vibrations, and so the murmur is produced synchronously with the first sound of the heart. But observe, the second sound of the heart is, in this case, perfectly pure, clear, and distinct. From this we infer that the lesion of the valves is such that while it impedes the outflow of the blood from the ventricles, it in no way interferes with the integrity of the aortic valves, and they are, therefore, as fully able as in the state of health to close the aortic orifice, and so prevent regurgitation from the aorta into the ventricle.

But we have, I think, in this case something special in the cardiac mechanism, under its new conditions of disease.

I may compare for a moment the case of Mrs. M. with that of poor G., another patient in hospital, with similar stethoscopic signs of disease. In the latter instance we have great cardiac suffering, the equilibrium of the circulation is profoundly impaired, the lungs and liver suffer in consequence, there is much œdema, general debility, and incapacity for exercise, not to say manual labour or active avocation of any kind. And yet the case of G. presents essentially the same stethoscopic phenomena. There is but a single murmur; it is systolic or audible with the first cardiac sound; it is propagated up the aorta. It is not, to be sure, of anything like the same intensity as that in Mrs. M.; it is not propagated one-tenth of the distance; it has not the same whirring character. But all this, if we confined our attention to local and stethoscopic signs, would

only mislead us, for we should be led to imagine that Mrs. M's. was far the worse case of the two. Whereas, in practical reality, Mrs. M's. state of health is one of comparative ease; poor G's. is one of much suffering, and our prognosis must be of the most unfavourable kind, and implies a speedy issue in death. They are both cases of *non-regurgitant* obstructive disease of the aortic valves. Wherein do they so essentially differ? Are we to assume that it is a mere freak of disease; that in one there is tolerable health over a period of at least two years and a half, and this compatible with child-bearing and nursing; while in the other the debility is extreme and the suffering great? It is not a freak of nature or disease; this is, I believe, a term of a by-gone day, and implies insufficiently or unsuccessfully explored causes.

From a review of the numerous morbid specimens which are in my possession I think I can satisfy myself that there exist two very distinct forms of non-regurgitant obstructive disease at the mouth of the aorta. (The various proofs from examination and comparison of specimens cannot be given in print in the absence of illustrations.) In one of these forms it may be observed that the aorta is constricted at its mouth, and the vegetations are so placed as to present a very serious obstacle and impediment to the egress of the blood from the ventricle. I shall call this variety obstructive aortic valve disease, with narrowing of the mouth of the aorta—for brevity sake we shall term it "obstructive stenosis." It is well exemplified in some of my specimens; it is what I believe exists in the case of G. It is necessarily attended with great disturbance of the equilibrium of the circulation, and a permanently incomplete and ineffective circulation of blood. The lungs, the liver, and the other organs so directly implicated when the balance of the circulation is destroyed in the heart's chambers, become necessarily diseased in this form of valvular lesion.

Now, contrasting other specimens, I find there exists obstructive disease, it is true, in the aortic valves; but though the vegetative masses are considerable, the mouth of the aorta is larger than natural, and though the warty vegetations obstruct the blood as it flows from the ventricle, still the vessel is so capacious that no serious impediment to the egress of the blood takes place. The impediment is sufficient to throw the blood into vibrations, which cause systolic murmur, but the circulation is efficiently maintained, for the great arterial tube readily admits of the free passage of the blood through it. This latter condition I assume to exist in the

case of Mrs. M. I think we may, with propriety, designate it obstructive disease at the mouth of the aorta, with a patulous, or it may be a dilated state of the vessel. We may, for brevity sake, designate it "obstructive patency." There is one difference in the signs in these two cases, to which I have not yet called attention, and I presume it will hold for the two classes of cases. It is the condition of the radial pulse. In the one class of cases, that of stenosis, it is a small weak pulse, that of an imperfect circulation. In the other class of cases, like that of Mrs. M., the pulse is natural in force and volume; it is the pulse of a vessel receiving its full charge of blood at each stroke of the heart. In fine, in the one case we have a deficient and wholly inadequate circulation; in the other the circulation is well and fully sustained, and quite as much blood finds its way at each stroke of the ventricles into the aorta, and thence into the peripheral vessels as in health, *malgrè* the vibrations given to it at the mouth of the aorta, as it issues from the ventricles, by the vegetations aforesaid.

I have elsewhere taken an opportunity of showing how the considerations to be derived from a study of the states of patency and stenosis apply to mitral as well as aortic valve disease. In my mind they give us a new light to aid in the explanation of the apparent anomalies and paradoxes which we have been accustomed to associate with our ideas of cases, bearing the same technical designation, but differing as widely in practical result to the patient as the cases of Mrs. M. and poor G. are seen to do.

Another case, which bears out the foregoing observations, may be cited from my note-book. It is that of a gentleman, then aged 36, whom I saw in consultation about two years since. He was then labouring under an aggregation of aggravated and apparently hopeless maladies. At the period I speak of I found him suffering from delirium tremens, extreme anasarcous swellings of the lower extremities, dropsy of the abdomen, and an anasarcous state of the upper extremities and of the face. The urine was albuminous, but *not* of low specific gravity. But his chief complaints were referred to the precordial region and chest generally. The breathing was hurried and oppressed; much palpitation and cardiac distress being complained of; the pulse was rapid and feeble; and on applying the stethoscope over the heart a very loud, rough, and whirring systolic murmur was audible, which could be traced up the aorta and into the carotids with great intensity.

For more than a week this gentleman's life was despaired of.

His will was executed in anticipation of an immediately fatal issue. Extreme delirious excitement prevailed to such an extent that it was next to impossible to keep him in bed, all those immediately in attendance on him being overborne by the violence of his demeanour. The dropsical state was daily increasing; and it was evident that he was fast wearing out the slender thread of life that remained to him.

Much against the will of his friends, who from former experience supposed that almost unlimited supplies of stimulants were required to maintain his system under the state of delirium, I insisted (and not without much difficulty were my injunctions carried out) in having the supplies cut short. With the more rational frame of mind thus soon induced we were enabled to enforce the regular use of diuretic and purgative medicines, and other suitable remedies. A rapid improvement in his state was speedily effected; a copious drain by the kidneys and bowels was maintained for several days; and ultimately we had the gratification to find that the dropsical swellings completely subsided; the circulating system became tranquilised; *though the cardiac murmur was still persistent;* the respiration returned to its normal rhythm; strength was gradually restored; and the patient was enabled, after the lapse of a couple of months, to resume his ordinary avocations in the country. He even acquired a very considerable amount of vigour, which he had been a stranger to for a long time previous to his illness; and, amongst other things, it may be mentioned that, though married for some five or six years prior to the illness in question, it was only about a year subsequent to it that he became the father of a child. He still lives in the enjoyment, I am given to understand, of fair average health.

My interpretation of this case is very much the same as that given for the preceding one, viz., that it was, or rather is, an instance of "obstructive patency" at the mouth of the aorta. The dropsical state I am disposed to refer to a temporary overturning of the equilibrium of the circulation, with congestion of the lungs, liver, and kidneys, induced by the state of excitement consequent on continued and excessive indulgence in alcoholic stimulants.

We can readily conceive, it appears to me, how in the case of Mrs. M., and in that of this gentleman, the circulation can be fairly maintained under the exigencies of the new conditions of obstruction and patency at the aortic orifice as long as the blood is not driven at too high a speed, or under too high pressure. The patency of

the aortic orifice seems, under these circumstances, to compensate for the obstacles opposed to the egress of the blood by the warty vegetations on the valves. When, however, under alcoholic or other stimulants the circulation is driven at a high pressure, the equilibrium of the compensating agency and the obstruction becomes lost; each cardiac beat is attended with incomplete and inefficient discharge of blood from the ventricle into the aorta; each successive ventricular contraction and dilatation leaves a small surplus of blood undischarged from the ventricular chamber; this of necessity tells, in a retrograde manner, upon the left auricle and its blood-charge; this again, in its turn, upon the pulmonary veins; congestive stasis is thus produced in the lungs; through the terminal radicles of the pulmonary artery, through this vessel itself, and finally through the right ventricle and auricle, and so through the venæ cavæ to the liver and other great organs and parts the impediment is propagated. Finally, dropsy supervenes as a mechanical result of the congested state of the venous system in the great viscera and in the extremities.

Pure Uncomplicated Myocarditis.—The last case I shall cite in the present paper is one which I regard as of uncommon interest and importance. It furnishes an example of complete restoration of the heart to the most perfectly normal and regular action after years of prolonged suffering from cardiac disease.

The patient, a gentleman now aged 44, of light but vigorous frame, sanguine temperament, and active habits of mind and body, and who had formerly enjoyed uninterrupted health, in the early part of the year 1850 began to find himself in less satisfactory condition than usual. In July of that year—and then suffering much from debility and unpleasant sensation in the chest, with pain at the left side—he consulted a physician, who pronounced him to be labouring under "heart disease." The pulse was then ascertained to be 120 per minute. Leeches, and subsequently blisters, with 20 drops of tincture of digitalis, three times a day, were the remedies employed. Little or no improvement took place. And, speaking of his own case in a very able report, which he has placed in my hands, and which he has been good enough to review while in the press—the patient says:—"I grew worse daily; the action of the heart increased, with pain and soreness of the heart itself; until, at the end of two months, I became unable to go down stairs, and was obliged to sit on a sofa all day, and could not even move without increasing the heart's action." The treatment was continued for

four months "without further alteration;" but it appears the pulse was reduced to 72 per minute in November, 1850. The patient's report continues:—"I was then in a wretched, weak, nervous state; could not rest in the same position for a moment; nervous twitchings, and horribly unpleasant sensations all over the body." About the middle of January following, 1851, the heart again got into excessive action. "About the beginning of March I found myself in a most wretched condition; heart's action so rapid and violent; the beating of the heart at night rendered sleep impossible; and being deprived of the power of reading (from unpleasant sensations in the head, caused by the effort to read, long complained of then and subsequently), and unable to devise any other suitable occupation or amusement, I thought I should go mad." Two or three months subsequently some slight amelioration appears to have taken place in the general state; but the head was not improved; the patient "could not read three minutes consecutively without heat and pain in the head, and horrible sensations extending from the head downwards to the heart, and all over the body."

Change of air and regimen subsequent to this produced some considerable improvement in the general health and strength, so that the patient could walk some miles in the day (with repeated intervals of rest).

The history of this interesting case is protracted over the three or four succeeding years, with many alternations of partial improvement and retrocession. On the whole, however, a slow but gradual amendment in the state of the general health, and in the condition and action of the heart, took place between the years 1852 and 1855. Towards the middle of this latter year the patient found himself well enough to resume his practice at the legal profession; but he adds, "I cannot say that my health was *perfectly* restored until 1857."

The various plans of treatment employed in this case comprised digitalis, prussic acid, bitter infusions, ignatia, iron, zinc, and other tonics. Vesication—or, as the patient himself terms it, "the blister torture"—was continued every third day for ten months; and during four months longer the patient "was weaning himself off it"—that is, continuing its use, but at longer and longer intervals.

A tonic regimen, with cold shower baths, was persevered in for nine months with, apparently, some improvement to the general health, as during its use he was able to walk about two miles in the course of a day. But that there was no substantial gain may be

judged from the fact which he states that "having one day over-fatigued myself, I was not able to stir out for a month, and did not recover the effects of it for the entire winter." Shortly subsequent to this he underwent a course of hydropathic treatment. which was prolonged for a year and a half. He appears to have improved a good deal in general health for a time, while under this treatment, which he himself ascribes to "the effect of the air and regimen as much, if not more, than the hydropathic treatment, which was administered very sparingly at first." It is worth while to note, that during this period his allowance of animal food was diminished one half—his hydropathic physicians recommending little meat and much vegetables. Hydropathy was abandoned in its turn; and finally the patient placed himself under mesmeric treatment.

In proceeding to comment on this singular case I may premise, that I had several opportunities of examining this patient at periods when the heart was in a state of the highest excitement. Under these circumstances the debility was extreme, the patient's sufferings most intense, and the cardiac action almost more violent and tumultuous than I have ever witnessed it in any other case. The face was flushed, and the malar bones especially much congested, but of a vivid, not a cyanotic hue. The pulse was rapid, 120 to 130, but not irregular; and it was not remarkable for force or volume. The impulse of the heart to the hand, placed over the precordial region, was very violent and tumultuous; percussion gave no positive indications of much increased size of the organ; but when the stethoscope was applied, a loud, diffuse, systolic bellows-murmur was audible, with great and equable intensity over the whole precordial region. No doubt remained on my mind, on any of the occasions on which I examined him, that this gentleman laboured under incurable organic valvular lesion, and that it was but a question of time as to when the fatal issue might be expected. I believe I am justified in saying that this opinion was fully shared in by all those who examined the patient, and amongst them were some of the ablest stethoscopic observers whom I am acquainted with.

The subsequent history of the case is soon told. This gentleman resumed the practice of his profession in the month of June of the year 1855, as above stated. In the year 1857 he considered himself *perfectly* restored to health. In the following year it became desirable to effect an insurance upon his life, and from the entirely satisfactory report of the examining physician as to the total absence of all morbid signs or symptoms referrible to the heart, or indeed

any other portion of the system, he was accepted as a first-class life. On two subsequent occasions, it became my duty to examine his life for insurance, and after the most minute, prolonged, and careful stethoscopic examination of the heart, and a full exploration of the general state of the system, I could come to no other decision than to recommend him, as a first-class life, to be insured without extra risk premium. As in the former instance, his life was accepted in both the Companies for which I was concerned. It is needless to add, that a full history of his previous illness was, in every case, submitted with the proposal for insurance, and the medical examiner's report. I may, in conclusion, state that while this paper is in the press I have made a renewed and most careful exploration of the heart in this gentleman. Its impulse and sounds are *perfectly* normal and regular, and the pulse is equable, of moderate force and volume, and steady at 72 per minute. In reflecting on this very singular, if not unique case, the following considerations arise:—

1. It might be assumed that the patient laboured under a functional affection of the heart.

2. The disease might be assumed to be of the nature of those cases of chlorosis and anemia which we know may and do occur in the male, but which are so much more common in the female.

3. It might be assumed that this gentleman laboured under an obscure form of disease of the nervous system, with secondary and symptomatic disturbance of the circulating system.

4. It might be supposed that the case was one of organic lesion, affecting the mitral valves.

5. It might be assumed that the case was one of obstructive disease at the mouth of the aorta.

Cor.—As a corollary to the 4th and 5th propositions, it might be now assumed that the case was, or rather is, an example of organic disease of either the mitral or aortic orifice, with suppression of the murmur, usually attendant on those affections, in the manner pointed out by myself and others.

6. It might be assumed that the case was one of pure, uncomplicated, but very chronic myocarditis.

That the last theory is the only tenable one, and that which will alone explain all the phenomena of this very singular and instructive case, I shall presently endeavour to show. We shall, in the first instance, make a few observations for the purpose of refuting the other theories which may, as we have seen, be advanced to account for the principal features of this gentleman's case.

Very singular and anomalous cases of functional disturbance of the heart, must be familiar to all practitioners much versed in cardiac pathology. I am not, however, aware of any instance, nor indeed can I even conceive the possibility of any such case, in which functional disturbance of the heart was continued over such a protracted period as in the example now before us. Besides, it is beyond all question that the cardiac distress, pain, and tumultuous action of the organ, with the quickened pulse, flushed face, and vividly congested malar bones and general debility, observable in this case, were positive and not subjective phenomena. The violent ventricular impulse, and the loud whirring murmur audible by the stethoscope, would have satisfied any observer that the case was one of organic lesion of some kind, and that no functional derangement could produce phenomena of so unaccountable a character. Against the hypothesis of chlorosis and anemia, the patient's previous history, temperament (sanguine), habit of body, and *colour* of surface generally, as well as of the face, constitute, in my mind, conclusive evidence. Further, to judge upon the good old rule, from the arguments furnished by the *jüvantia* and *lœdentia*, iron and tonics failed to give the smallest relief, and so far make directly against the supposition of any chlorotic state, which, indeed, there was, in my mind, no ground for thinking to exist.

In reference to the fourth and fifth propositions, it may be affirmed that, in the whole range of cardiac pathology, we are not acquainted with any facts that would warrant the conclusion that the valvular apparatus of the heart, once impaired by organic lesion, can ever be restored to perfect integrity. Indeed, the most superficial consideration of the anatomical disposition and the delicate texture of the semilunar or mitral valves, must satisfy us, from *a priori* reasoning, that even slight injury of these extremely fine membranous expansions does not admit of repair by any efforts of nature. While pathological anatomy demonstrates that the various morbid conditions of the heart's valves—such as fissure, cribriform perforation, ulceration, warty vegetation, calcareous deposit, or other change of what kind soever—tend, in proportion to the duration of the case, to become more and more aggravated morbid states. That, under certain circumstances, in which the equilibrium of the circulation is but little disturbed, life may be prolonged, in cases of valvular lesion of the heart, for almost an indefinite period, we have already proved. But we have no evidence whatever to show that organic change in

the valves of the heart admits of radical cure, with a return to perfectly healthy action of the organ, and total cessation of all morbid phenomena.

It will be desirable to advert here to certain remarkable instances of temporary suppression of cardiac murmurs developed in connexion with organic lesion of the valves, and which, as before stated, it might be supposed would furnish adequate explanation of the phenomena of the case now before us.

The temporary suppression, or even final cessation of murmur, developed in the mitral orifice, is familiar to physicians fully versed in the pathology of the heart.

Such suppression of cardiac murmurs has been noticed in the brief interval before death, when the heart's contractions lose their accustomed vigour, and the blood is not propelled with sufficient force over the valvular irregularities to produce murmur.

Suppression of mitral murmur has likewise been noticed in certain cases at a period long antecedent to death. It seems to be due to an artificial re-establishment of the equilibrium of the circulation, and a cessation of ventriculo-auricular regurgitation, by an adaptation of the diseased, but now much thickened and enlarged valves, to the mitral orifice. These valves, which when first attacked by disease were rendered incapable of closing the orifices which they were destined to protect, become, by thickening of the valvular texture, or by peculiar adaptation of the vegetative masses, again competent to close the orifice, which in many instances has itself likewise become *adaptively* diminished in size. I had myself an opportunity, some years since, of calling the attention of the Pathological Society of Dublin to a similar adaptive process, which I found to be effected, in the case of the aortic valves, with concomitant suppression of the murmur previously heard with great intensity.

Both in respect to the aortic and the mitral valves it is to be observed, however, that suppression of murmur is not attended with alteration in the general phenomena of the case. The disturbance of the equilibrium of the circulation, and the consequent embarrassment of the organs in physiological connexion with the heart remain as before. There is no restoration to health, and the morbid condition is sure to end fatally sooner or later.

In reference to the sixth proposition, it may be observed, in the first place, that myocarditis, though comparatively unknown to the clinical physician as yet, is a morbid state well recognised in the records of pathological anatomy.

The cases cited by Testa, amongst other authorities, prove the occurrence of inflammation of the parietes of the heart independently of valvular lesion; and abscess in the walls of the heart, though not hitherto recognised during life, is a well-known pathological occurrence. We also know that several other lesions of the muscular texture of the heart present themselves in cases in which no lesion of the pericardium, endocardium, or valves is discoverable. We may cite, as examples, the softening of the heart in typhus fever, and fatty degeneration of the heart. I have myself witnessed cancerous deposit in the ventricular walls without any attendant morbid state of the lining membrane, or the serous covering of the organ.

Inflammation of the muscular texture of the heart, irrespective of valvular or pericardial lesion, is thus, it may be concluded, a very possible, I would even go the length of saying a very probable, occurrence. Indeed, I am disposed to regard it as a morbid condition of greater frequency than is commonly supposed.

It may be acute or chronic; it may be attended with the formation of abscess or purulent infiltration in a more diffuse form; and, again, we can readily conceive the occurrence of chronic inflammation of the walls of the heart, without the formation of pus. Having, as I think, conclusively shown that no other of the morbid states assumed is capable of explaining the phenomena of the case of this gentleman, we are, I think, driven, *par voie d'exclusion*, to adopt the theory of a pure uncomplicated myocarditis, to account for the otherwise unexplained, and, indeed, unexplainable history of the case before us.

The general state of perfect health now enjoyed, after the lapse of so many years, with the complete state of integrity of the circulating apparatus, as tested by so many and so searching explorations, at long intervals, by different observers, for the purposes of life insurances, are conclusive proofs that no lesion impairing the valves existed at any period.

The cardiac distress, pain, palpitation and murmur, diffuse and not specially limited to any valvular area, and the occasional œdema are readily explicable on the assumption of a chronic myocarditis; while the complete restoration of the heart to healthy action, after years of suffering, is explicable on no other theory of cardiac pathology with which we are yet acquainted.

ART. XV.—*Reports of Rare Cases.* By SAMUEL GORDON, M.B., F.R.C.S.I., Physician to the Richmond, Whitworth, and Hardwicke Hospitals.

(*Continued from* Vol. xvii., p. 348.)

IV. *Case of extensive fatty degeneration in a boy* 14 *years of age. Death from obstructed arterial circulation.*—A pale, unhealthy looking boy, 14 years of age, an inmate of a public school, came under my observation on the 17th of October, complaining of severe headache, sore throat, and loss of appetite. The throat affection rapidly got well; he was confined to bed for only two days, but not making a good recovery, he was retained in the Infirmary. His symptoms seemed to be those of acute cardialgic dyspepsia. He was pale and weak, and complained of weakness, principally after his meals, when he also suffered from pain in the stomach, and vertigo. He had constant headache, his tongue was tumid, indented, broad and white, with enlarged papillæ, and his breath offensive; the bowels acted irregularly, and the urine was pale and abundant. His appetite was very capricious; he was generally thirsty; he slept badly at night, but was usually very drowsy through the day. His pulse was but slightly quickened; his feet and hands were generally cold; and his skin was usually covered with a greasy perspiration. He had no cough, and repeated careful stethoscopic examinations failed to detect any physical sign of disease in his chest. Such were the prominent symptoms under which he laboured, and from which he appeared to be recovering but slowly, when, on the evening of the 5th of November, he was suddenly seized with acute pain in the calf of the right leg. This pain was excessive, and kept him awake all night. I found him the next morning still suffering from it, he could not bear the least pressure, nor, without great increase of suffering, allow any examination of the limb, which he kept in the extended position, from which he could not alter it; but, provided that the calf of the leg was not touched, he could allow it to be moved. The foot was cold and remarkably pallid, and from the knee down was almost entirely devoid of sensation; he did not feel severe pinching, and even pricking with a pin he felt but very faintly. Thus, coincident with this severe pain in the leg, there was paralysis of motion and of sensation, with remarkable diminution of temperature. Careful examination failed to detect pulsation in either anterior or posterior tibial arteries of the right leg, or in the

popliteal or even in the femoral, while in the opposite limb all these arteries pulsated distinctly.

Nov. 7th.—The temperature of the right foot had fallen to 60° at the toes, although the foot had been kept wrapped in warm flannel, and frequently rubbed with a stimulating liniment. It had assumed a cadaveric pallor and rigidity, but there was not the least œdema nor venous turgescence nor capillary fulness; the anesthesia continued. The femoral artery could be felt like a quill, rolling under the finger; and examination with the stethoscope (as originally practised by Drs. Graves and Stokes, in a somewhat similar case), proved that there was no pulsation in the right external or common iliac or femoral arteries on the right side, while it was increased in strength and rapidity in all these arteries of the left side.

The case progressed slowly; on the 9th, the foot appeared to be regaining its natural heat; the temperature had again risen to about 70°, and with the return of heat there was also a most marked increase of power of motion and also of sensation. The patient could now draw the affected limb up to him in the bed, and seemed to prefer keeping the knee in a semiflexed position. He showed more feeling in the foot and leg when they were handled, but the pain was still very severe in the calf of the leg, and he shrieked with pain when this part was touched. There were, on this day, the following local signs of improvement:—1. Complete freedom from pain, as long as he lay undisturbed. 2. Increase of temperature of the foot. 3. Return of sensation; and 4, of power of motion to the affected limb. But, on the other hand, the constitutional symptoms all indicated extension of disease, the pulse had risen to 120°, the respiration was hurried and unequal, and his appetite began to fail; moreover, the second, third, and fourth toes began to be discoloured.

Nov. 10th.—There were added to the above symptoms, an almost incessant short, teazing cough, without any expectoration. Again the chest was carefully explored; the heart's sounds were very feeble but distinct; the respiratory murmur was somewhat rough and interrupted, but otherwise not abnormal.

The line of treament hitherto pursued, since the accession of the acute attack, was the local application of anodyne and stimulating embrocations and liniments, and the internal administration of bark and bicarbonate of potash, with a full dose of calomel and opium at night, and wine and beef tea at stated intervals.

Nov. 14.—Dr. Hutton visited him with me; he agreed in considering the nature of the case to be an arterial affection, and suggested the local use of mercury, and chlorate of potash internally, which suggestions were carried out. He also surmised that, although the case was clearly not a phlebitis, still it would most probably be found to be connected with visceral disease, most probably pulmonic; and we again made accurate search for physical signs of pneumonia, or its allied diseases, but without effect.

Nov. 15.—Although the temperature of the foot has risen considerably above what it was on the 7th, still it is considerably below that of the opposite limb. The gangrenous action does not seem to be extending; it has reached a variable height in each toe, but no where transgresses the line of junction with the foot; it is unaccompanied by vesication or œdema; he has no pain in any part of the limb, except when pressure is made on the calf of the leg. He complains to-day of a stitch in the left side, near the heart. A slight crepitation is heard in the lung at this part. A few leeches relieved him.

Nov. 17.—He coughs frequently, still without expectoration; his face is puffed, and slightly œdematous; his lips blue; sonorous and sibilous *rales*, of variable intensity, are heard over all the chest. Pulsation cannot yet be felt in any of the arteries of the right lower extremity; still there is no œdema nor venous turgescence; the temperature is still below that of the opposite limb; the power of sensation and of motion in the extremity is almost natural. He lingered until the 25th, when he died asphyxiated. The bronchitic affection appeared to make rapid progress, resisting all treatment, and the local affection remained most remarkably quiescent. It was, on one or two occasions, imagined that pulsation could be felt in the tibial arteries; but, at all events, it was not permanently restored; and to no other part of the arterial tree, from the common iliac down, did it ever return. The limb retained its restored temperature, which, however, never equalled, much less exceeded, that of the opposite limb; and although the mortification had not passed beyond the line of junction of the toes and foot, no line of separation had formed. The heart was examined almost daily; the impulse was always feeble; the two sounds were always audible; and there never existed any abnormal sound in the heart or large arteries.

Mr. Purser assisted me in making the *post mortem* examination. The lungs presented a well-marked example of emphysema: when the anterior wall of the thorax was raised they did not collapse, but

presented a pale and bloodless appearance. They had the usual soft, downy feel, and a section of them showed the widely dilated air vesicles. The same section also showed that a quantity of soft, unhealthy, greyish matter had been deposited throughout both lungs. This matter seemed closely adherent to the very terminal bronchial tubes, which were excessively congested, and the lower lobe of the left lung was particularly engorged. The valvular apparatus of the heart was perfectly healthy. The right auricle and ventricle contained a very firm clot of fibrin, which also passed into the pulmonary arteries, and into their large branches, but did not by any means fill these vessels; otherwise the contents of the cavities of the heart were semi-coagulated, dark-coloured blood. The heart itself answered most accurately to Paget's description of granular degeneration. The *post mortem* examination was made in very cold weather, about twenty-four hours after death; yet it was like a heart beginning to decompose. The muscular substance was easily torn, as if with separation of fibres that only stick together, and the torn surface was lobulated and granular like a piece of soft conglomerate gland. The lining membrane of the aorta was very extensively studded with small white spots, slightly raised above the surface. The arterial system of the lower half of the body was very extensively and minutely examined, and these appearances were found to exist over a very considerable extent of the arteries, and were exactly similar to the atheromatous patches, which Gulliver has proved to consist of fatty matter, and which appear to be partly formed at the expense of the middle coat, and partly deposited in a granular and globular form under the inner lining. The canal of the aorta was empty until we reached its bifurcation, when a solid mass of fibrin was found to block up the right common iliac artery. This clot was found to ride over, or be fixed on, the actual bifurcation, a very small conical piece of it projecting into the left common iliac artery. There was no further extension of it on the left side. This solid fibrinous mass extended throughout the arteries of the right lower extremity, homogeneous and continuous, from the commencement of the common iliac artery until we reached to about the centre of the leg. Down to this point the arteries had been completely closed by the fibrinous mass, there being no possibility of any blood passing either through it or by its side; and the lining membrane of the artery, and its other coats, presented no appearance of disease beyond the degeneration above mentioned, and that it was of a red colour; but from the point indicated, in both anterior and posterior tibial arteries, until we

reached their most minute branches, the lining membrane was of a deep red colour, and contained dark grumous blood, which again, as long as the vessel was of any size, contained a long black coagulum in the centre. The veins were healthy.

The spleen was swollen, soft, and contained numerous deposits of soft pultaceous exudation similar to those formed in the lungs. Both the liver and kidneys presented well marked examples of advanced stages of fatty degeneration.

The muscular structure throughout the body generally had, more or less, lost its usual healthy appearance, and assumed a pale yellow colour, was easily torn, and its substance was evidently loaded with oil globules; but when we came to examine the muscles of the calf of the right leg, where so much pain was complained of during life, we found them to be completely disorganized. The fleshy portions of the soleus, with the flexors and peronei muscles, had lost altogether their striated appearance, and were replaced by a substance not unlike rotten sponge, which tore on the least force being used, was of a dark grey colour, and seemed saturated with a thin oily fluid; it had, moreover, the appearance of boiled meat, fly-blown, or in a very early stage of decomposition, before any discoloration or fetor have commenced; there was no appearance whatsoever of any purulent infiltration. The entire body had a peculiar heavy odour, such as I have often observed from cases of extensive fatty degeneration. There seemed to be a most unusual quantity of fluid blood in the body, and that of a very dark colour.

There are several points of interest in this case. I would first allude to the fact, that cases of arterial obstruction may be mistaken for paralysis. It has been remarked by Graves and Stokes, that :[a] "In the advanced stages of this disease the diagnosis is not difficult; there is paralysis, but this has not been preceded by symptoms of central or spinal disease, and the intellects remain undisturbed. To this the feeble pulsation, or its complete absence in the arteries of the limb, are to be added, and no difficulty will be experienced in recognizing the disease. In its early stages the diagnosis is more difficult."

The following case is from Cruveilhier:—"I am aware of a case in which the mistake lasted much longer. The nature of it was as follows:—A man, 64 years of age, was admitted into the surgical wards of an hospital, for lancinating pains, with sensation of cold in

[a] Dublin Hospital Reports, Vol. v., p. 17.

the toes of the right foot. No one in the least suspected a threatening or existence of gangrene. An endeavour was made to restore the sensibility by sinapisms, and the introduction of acupuncture needles. The patient, being phthisical, was transferred into a medical ward. There it was still supposed to be an ordinary case of paralysis of the lower extremity, and it was not for several days after, that the true nature of the disease was discovered, when to the insensibility and coldness of the limb, discolouration was superadded."

It is clear, then, that cases of arterial obstruction may be mistaken for paralysis; and it may be worth consideration what are the symptoms which are so constant as to give rise to this error in diagnosis.

We find first, as in this case, *complete paralysis of sensation and motion.* The following are Cruveilhier's observations on this interesting point:—

"If the arterial circulation be not completely intercepted in the limb by means of the obstructing clots, nutrition is kept up; but sensation and motion may be either diminished in it or completely abolished, and that either for a time or permanently. I am not aware if there are on record cases of permanent paralysis from arterial obliteration which have not been followed by gangrene; but it is very requisite to distinguish paralysis of sensation and of motion arising from incomplete stoppage of the arterial circulation, from what may be properly termed gangrene, or more properly from paralysis, which is the first symptom of gangrene; and the more so because this paralysis, connected with gangrene, comes on suddenly, in a moment, and is often unaccompanied by any change of colour in the skin, or any of the physical signs of gangrene."

He then relates how it once happened to himself to be called to see a woman, about 40 years of age, the subject of a cancer in the breast, who had all the morning been walking about her room as usual, when she was suddenly seized with complete paralysis of sensation and of motion in the left upper extremity. "I confess," he says, "that I thought I had to do with an ordinary paralysis. I had the limb rubbed with spirit lotions, and then wrapped in warm flannels; but after some time, being struck with the cadaveric aspect of the limb, and seeing that in some places the rubbing had taken off the cuticle, I saw my mistake, and I pronounced it to be a form of gangrene, which I have since called 'gangrene by cadaverisation,' and which the event but too fully confirmed."

But, again, we find this paralysis, as also in the present case, preceded or accompanied by excessive pain in the limb, which may be mistaken for neuralgic pain. This point is also well illustrated in "Cruveilhier's Pathology." A lady, sixty-seven years of age, was bled in the left arm for a pneumonia. Four hours after the venesection she was seized with acute pain from the points of the fingers to the bend of the elbow on the same side, with paralysis of sensation and of motion of the hand. The lady referred the paralysis to the bleeding, and thought that a nerve had been wounded. The next day Cruveilhier saw her, and found the paralysis of sensation and of motion confined to the left hand. She could not possibly either flex or extend the wrist, and was complaining also of excessive pain in the fingers. I considered (he says) the paralysis to be confined to the hand; that this combination of paralysis and pain had its seat not in the brain, but in the nerves of the hand; and that this cause was a rheumatism, fixed in the cutaneous and muscular nerves of the hand. However, having discovered that the pulse was not to be felt in the affected side—that the radial artery was small, hard, and painful on pressure, I added to my note that the paralysis, purely local, was referrible either to a lesion of the nerves or to a lesion of the arterial system. The following day gangrene took place.

These are the points which make the diagnosis difficult in the early state—the suddenness and completeness of the paralysis of sensation and of motion, and the intensity and perseverance of the pain. In some cases the pain precedes the paralysis by some days—a circumstance which is even more calculated to deceive.

The means of diagnosis on which we have to rely are briefly these:—1st. That the paralysis from arterial obstruction is always accompanied with coldness of the limb, and a peculiar whiteness of the skin, like to that of a corpse: the limb is, in fact, deadened. To these Cruveilhier adds that, in this form of paralysis, the absence of sensation and of power of motion is, to use his own form of expression, as *complete as possible;* whilst it is rare to see a complete paralysis from lesion of the nerves. The finding the artery or arteries painful on pressure, and like a cord under the finger, would, of course, complete the means of diagnosis.

With regard to the immediate cause of these two prominent, very formidable, and distressing symptoms—the intense pain, and the paralysis with which the disease is ushered in. Acute pain appears to be almost invariably connected with a sudden obliteration of any part of the arterial system; it enters prominently into the history of

those cases where a large artery is obliterated by a mass of fibrin; and is, in all probability, caused by the excessive sudden distension of the coats of the artery behind the occlusion, which distension we know, in some instances, to amount to actual rupture. Cruveilhier's experiments lead, I think, to this conclusion, although the inference he drew from them was different. When he injected mercury into the femoral artery there was, at first, very little pain; but when, in a short time, the main artery of the limb became occluded, the pain was intense, as he himself terms it, *atroce*, excruciating. The pain clearly does not arise from inflammation. Cruveilhier, evidently at a loss to account for it, says it arises from a sort of struggle between life and death in parts deprived of their means of nutriment.

The paralysis of motion and of sensation are, perhaps, more easily accounted for. Passive motion of the limb causes great increase of suffering, so that it might be supposed that the want of power of motion of the limb arose simply, as we see every day in cases of acute articular inflammation, from the patient being unwilling to add to his sufferings, and to which condition the term vital anchylosis has been very happily applied. But this is not so; and, even if it were, would not account for the absence of sensation. Both phenomena are produced by the nerves being suddenly deprived of arterial blood, their usual stimulus and nutriment.

The next point of interest in this case is the consideration of the nature of the affection under which he laboured—whether it was an original active arterial inflammation, and if so, when this inflammation commenced; or were the arterial changes consequent on other disease.

Before this boy was sent to school, he was badly fed, badly clothed, and lived in very impure air—three evils which, when combined, are certain to produce degeneration of textures, which, in the present instance, instead of mere destruction of tissue, was led by circumstances to take on the form of fatty transformation; which, as Williams observes, under whatever circumstances it occurs, is obviously a process of degeneration or degradation to a low scale of animal or even vegetable life.

Post mortem examination showed that there was scarcely an organ in the body which was not affected by this fatty degeneration, and with the rest, the arterial system showed extensive marks of such disease. If these adventitious growths (which, whether fatty or not, must, as Hasse observes, at all events be considered not as a local disease, but as referrible to some constitutional cause), are capable of retard-

ing the circulation, and causing deposit of fibrin in the large arteries, as we know they do in the aorta, how much more will this be likely to occur in the small vessels.[a] In this way the circulation through the capillaries of the right and lower extremity was retarded, and, as occurred in so many of Cruveilhier's experiments, when the circulation had been obstructed to a certain extent in the capillaries and small sized arteries, there was then a sudden and complete stoppage of the circulation through the main artery, accompanied by the sudden accession of the formidable symptoms enumerated. The different effects observable in the condition of the vessels above and below a certain point in the leg, point clearly to two different causes: from the aorta downwards was clearly coagulated arterial blood; from the capillaries of the foot upwards to where the two points met was also blood, but deposited slowly, under circumstances more favourable for its decomposition.

The condition of the lungs was particularly worthy of observation. I had seldom seen exactly similar appearances, nor can I find that they are of ordinary occurrence.

They presented somewhat the appearance of partly-wetted sponge, but were not in the least softened or collapsed. They were of a dark grey, or lead colour. When squeezed, they gave out a quantity of thick, oily fluid, which greased the hands, and had a peculiar heavy odour, but not at all like that of gangrene. When cut, they presented a rough, granular section, and showed an immense number of circular openings, more or less large, which were evidently dilated pulmonary cells; and in many of those were found a similar thick, oily, but discoloured fluid. The appearances were totally unlike those produced by pneumonia in any form, or by any ordinary phthisical degeneration. I therefore conclude that they were produced by an acute fatty degeneration of the pulmonary substance—the same disease which pervaded almost every structure in the body. It is now many years since Mr. Rainey, of St. Thomas's Hospital, described a certain form of emphysema of the lungs, as originating in fatty degeneration of the pulmonary membrane; and it would appear in the present case that, in addition to the air cells having become dilated by the degeneration of their delicate lining membrane, there was a deposit of oleaginous matter in the dilated cells.

Hasse seems to have met with such a case, and although he

[a] See *post mortem* examination of Case VII.

attributes the appearances to *pneumonia*, he is evidently not satisfied with his own explanation of it. It is to be regretted that he does not give more particulars of the case. His account of it is as follows:—

"In an instance of considerable emphysematous dilatation, in a man who died of pneumonia, the diseased patches of the lung presented such peculiarity of appearance, that I at first entertained doubts respecting the real nature of the malady. The cut surface appeared as if besprinkled with dull-yellow granules of irregular shape, mostly the size of hemp seed, and of the consistency of soft butter or thick pellets of pus. These granules imperfectly filled little smooth cavities, likewise of irregular shape. They might have been mistaken for tubercles: all doubt, however, was removed by their aspect, their seat in pulmonary cells obviously dilated, their gradual transition into the ordinary bronchial mucus, their occurring at the anterior portion and at the margins of the inferior lobe of the right lung, and in the midst of gray hepatization (presenting in a conspicuous manner all the gradations from undilated to thoroughly emphysematous parts), and finally, by the fact, that no tubercles were discoverable elsewhere; to which may be added the symptoms observed during life."

It is rare to meet with such extensive fatty degeneration in any one individual, but particularly in one so young. Cases of fatty degeneration of the heart have occurred in children six and eight years of age, and have been described by Barlow and Ormerod. But in the present case, scarcely a tissue in the body appears to have escaped its influence; and while it appears to have made much further inroads on other organs, its effects on the arterial system were more directly fatal; nor is it the least remarkable circumstance in the case, the immense disproportion which was found to exist between the small extent and degree of gangrenous action which had taken place and the great amount of arterial circulation which was obstructed.

VII.—*Case of Typhoid Pneumonia; Treatment by Sulphate of Quina; Death from Impaction of Fibrinous Concretion in left Pulmonary Artery.*—A labouring man, 40 years of age, was admitted into the Hardwicke Hospital, on the 17th of February, complaining of great oppression of his breathing, and pain in his chest, with which he had been suddenly seized. His respiration was short and rapid, his pulse small and frequent. He was very weak; when

required to sit up in bed he almost fainted; and his countenance and whole manner indicated great prostration. His skin had a very light yellow tinge, and there were a few very small petechial spots over his body. He had the physical signs of solidification of at least the upper half of the right lung, but he had very little cough, and no expectoration; coughing or deep inspiration increased greatly the pain in his side. The treatment pursued was the administration of calomel, opium, and James' powder every three hours, with repeated applications of spirit of turpentine over the affected side. He said that he was perfectly well five days ago, and that his illness was brought on by continued exposure to wet and cold. On the 19th there was no perceptible improvement, the calomel and opium was discontinued, and he was ordered five grains of sulphate of quina every three hours. On the 20th his pulse had fallen from 128 to 116 in the minute; on the 21st to 100, and he had begun to perspire copiously; on the 22nd he appeared much improved; his pulse had come down to 80, and his respiration to 30 in the minute; he could inspire with comparative freedom, and the sense of weight on his chest had quite left him. The perspiration continued, and he took beef tea and other light nutriment freely, and appeared to have escaped all immediate danger. There was not, however, very much improvement in the local symptoms. The bronchial breathing and bronchophony continued, but there was vesicular murmur audible lower down in the lung than at first. He continued to improve on the 23rd; his pulse had on this day come down to 70, and his appetite was improving. There was now, for the first time, a very loud systolic murmur audible at the top of the sternum. On the night of the 23rd, whilst sitting up in bed laughing and talking with a patient beside him, he suddenly gave a loud scream, pressed both his hands to his chest complaining of intense pain; his breathing immediately became excessively rapid and laboured; he broke out into the most profuse cold perspiration; his chest heaved, gasping for breath; in a few moments he had a slight convulsive fit; vomited some brown fluid, and his bowels were moved involuntarily; his lips became blue, and his pulse, small and irregular, at length ceased altogether The resident pupil saw him immediately, and made no small exertions to relieve him, but he sank with frightful rapidity, and he was dead in less than a quarter of an hour from the commencement of the attack. Such a history led me to expect that I should find a rent in, or perforation of, some of the thoracic viscera; but such was not the case. I made a careful examination of all the cavities

seriatim. The upper lobes of the right lung presented an example of a form of pneumonia which I had not seen for some time. It was that form which was epidemic in this city many years ago, and which, from the peculiar colour of the lung, was termed "blue pneumonia," the pathology of which form seems to consist in the blood vessels being distended with unoxygenated blood, which excludes the air from the smaller air tubes. An accurate account of its morbid anatomy and pathology will be found in the Transactions of the Pathological Society.[a] In appearance it closely resembles carnified lung, but differs from it in the very material circumstance of retaining its original bulk. Such was the condition of a considerable portion of the right lung; of a blue colour, the consistence and feel of muscle, it sank in water, but retained its natural size, or was perhaps a little larger than natural. The lower portion of this lung was slightly emphysematous, as was also the entire of the left lung, although the pleural cavity at this side was obliterated by old adhesions. The bronchial mucous membrane of both lungs was highly congested.

On opening the aorta, at the distance of about half an inch from the aortic valves, there were found two small spots of rough lymph deposited on its lining membrane, and as if growing from it, these were found to be deposited on two spots of atheromatous degeneration in the aorta, but there were no further signs of aortic inflammation. The tricuspid valve was thickly entangled with fibrinous exudation; this exudation was granular, gritty, totally different in appearance and feel from fibrin as ordinarily deposited. There was also a small portion of the same structure, about the size of a very small hazel nut, lying in the apex of the right ventricle; the right cavities of the heart were otherwise gorged with black semi-fluid blood, which also distended the pulmonary artery, and on opening up this vessel we found a large mass of the same fibrinous substance, completely occluding its left branch. This concretion, which appeared to be composed of a peculiarly fine gritty matter mixed up with the fibrin of the blood, formed a solid plug, completely closing up the left branch of the pulmonary artery; beyond it the arteries were empty, while behind it the right ventricle and auricle were full of black coagulated blood, and a large coagulum filled up the trunk of the pulmonary artery. This coagulum, however, was of totally different consistence and

[a] *Vide* Trans. Pathological Society, Vol. i., p. 53 and 71.

material from the fibrinous plug referred to; but a substance similar to this latter, and about the size of a very small nut, was found in the apex of the right ventricle; and also interlaced into the different meshes of the tricuspid valve was a similar substance, with larger masses appended; a section of these showed that they were undergoing a process of softening in the centre. The abdominal viscera were healthy.

The brain, but more particularly its investing membrane, presented very intense vascularity; there was not, however, any extra-vascular effusion whatsoever. The arachnoid membrane seemed perfectly transparent and normal, nor was there any subarachnoid effusion.

The foregoing case presents at least two points of interest—1st, I would allude to the success of the mode of treatment by quinine in this form of pneumonia, thus removing from it the grave characteristic which it bore when first described by Dr. Corrigan, as "an idiopathic form of disease characterized chiefly by an atonic state of the vessels, and in which the symptoms were not amenable to any of the usual modes of treatment." It is now several years since I drew attention to the value of quinine in the treatment of typhoid pneumonia, and a very extended experience since has confirmed me in the remarks which I then submitted upon this very important subject.[a] I would now only allude to the fact of the apparently complete recovery, as far as the general symptoms are concerned, as evidenced by a slow pulse, normal respiration, complete freedom from fever, pain, and dyspnea, while a considerable portion of the lung still remains in such a state of solidity as to completely exclude air. This fact was not new to me; I had often recognised it before, by the physical signs, but never had an opportunity of verifying, by *post mortem* examination, the fact that the lung remains for so long a time so little altered from its diseased condition. It has frequently occurred to me to find, even after convalescence was apparently established, and the patient seeking his discharge from hospital, that the lung still remained solid, evidenced by the persistence of bronchial breathing and bronchophony, with dulness on percussion. Such cases are very intractable and difficult to cure; persistence in the use of quinine, in the same or modified doses, is useless, as is also the ordinary treatment by any form of mercury; indeed, I would go farther and say, that mercury usually does much harm. I have more than once seen in such

[a] See Vol. xxii., p. 95.

cases, treated with this mineral, symptoms of pulmonary phthisis to supervene, and this disease to run an unusually rapid course; but I have always experienced much advantage, and, in many instances, a rapid cure, from change of air, counter irritation, and the administration of iodide of potassium with bark: while the iodine acts as a resolvent of the coagulated fibrin, the bark seems to exert its tonic powers on the capillary vessels of the lung.

But the second, and perhaps the chief, point of interest is the mode in which this patient's death occurred.

On this point I would observe, that the substance found in the left pulmonary artery was truly a fibrinous concretion—or, as it is now commonly termed, an *embolus*, and not simply coagulated blood. It fulfilled two of the four conditions laid down by the late Dr. Hughes, under any one of which he considered "the evidence of the fact decided and incontrovertible." First, it was entirely separate and detached from the coagulum which filled up the remainder of the vessel; and, second, certain chemical changes, the result of degeneration, were observable in the concretion, and which were not to be found in the accompanying coagula.

I cannot, from this case, add much to the symptoms originally laid down by Hope as diagnostic of this affection; but it bears record most fully to the accuracy of his description:—"Sudden and excessive aggravation of the dyspnea, without any other obvious adequate cause; the pulse small, weak, irregular, intermittent, and unequal; the patient, in agony from an intolerable sense of suffocation, cannot lie for a moment, and continues tossing about in the most restless and distressed condition, until his sufferings are terminated by death. During this state, the surface and extremities are cold, the complexion livid, and in most cases there is nausea and vomiting of all ingesta." There were also present, in this instance, the convulsive movements and stupor which Bouillaud met with in a similar case.

The great rapidity with which death supervened was, of course, owing to the large extent of the right lung which was already rendered useless, by the state of solidification to which it was reduced. The emphysematous condition of its lower portion, and of the left lung (although placed in such an unusual and unfavourable condition for its occurrence) bore witness to the immense efforts which nature made to readjust the respiratory process. I have already elsewhere alluded to this[a] condition as constant upon fibrinous con-

[a] Vide Dublin Hospital Gazette, N.S., Vol. ii., p. 345.

cretions in the right side of the heart or lungs, with which it seems to be intimately connected.

The diagnosis is now comparatively easy of *emboli* discharged from the left side of the heart; and cases are almost daily recorded in which their occurrence has been recognised during life, and suitable treatment accordingly been adopted; but, inasmuch as the general signs indicative of their existence in, or discharge from the right side of the heart occur in all cases in which there is an extreme obstruction to the circulation through the heart, whatever be its cause, the diagnosis of their occurrence during life, as emanating from the right side, is peculiarly difficult; so much so that perhaps we are not yet in a position to predicate of their existence without actual *post mortem* investigation. The following case, however, still under investigation, I have held forth as an example of this very peculiar affection:—

VIII.—*Case of Sudden Acute Bronchial Congestion, supposed to have its origin in the Obstructed Pulmonary Artery.*—Anne Byrne, a servant in a large dairy, was carried to the Whitworth Hospital, on the 7th of March, in a state of collapse. By the aid of stimulants, chiefly external, she was partly roused from this condition, and we then learned that three days before she was in perfect health; that without any known cause she found her breathing getting short, and that this dyspnea hourly increased. On the morning of the 7th she had a slight convulsive fit; and in the collapse consequent on it she was admitted into the hospital. She was stupid, listless, very drowsy; her face congested; lips blue; surface of the body cold, and more or less livid. There was no complete paralysis of sensation or of motion; but her limbs retained no strength; she could not be put in the erect or sitting posture for a moment for fear of syncope. The radial pulse was extremely weak, and the heart's action was feeble, wavering, and almost imperceptible; no cardiac sound, normal or abnormal, could be heard; but a deep, loud, sonorous *rale* permeated the entire chest. This sound appeared to emanate from a point beneath the sternum, and from thence to radiate in all directions; the respiratory murmur was scarcely to be heard in any part; there was no albumen in the urine.

I had considerable difficulty in coming to a conclusion as to the nature of this case. The symptoms were evidently produced by the brain being gorged with venous blood; but this was clearly a

secondary lesion; it was no ordinary case of bronchitis either in symptoms or in physical signs. It resembled most a case of tracheal obstruction: but not from a foreign body within the trachea, for, first, there was no history of the introduction of any such. Second, the symptoms did not supervene suddenly, but were three days accumulating. And third, the respiratory murmur was equally feeble, and the tracheal *rale* equally loud throughout both lungs. And, on the other hand, an illness of only three days was unusually short for the accumulation of symptoms of pressure from an aneurismal or other such intra-thoracic tumour as is ordinarily met with.

I treated the case with external stimulants, warmth, and friction, to restore the capillary circulation; blisters to the region of the heart, and whiskey and ammonia internally.

She slowly recovered from the collapsed condition, and, in proportion as she did, her cough became very troublesome, and she was more than once in imminent danger of syncope from attempting to sit up in her efforts to cough. Great and permanent congestion of the jugular veins was now superadded to the other symptoms, and she complained of intense pain in her heart. She very slowly amended until the 12th, when, after using some slight exertion she fell back exhausted and apparently moribund. She was only aroused by the momentary exhibition of a powerful carbonate of ammonia emetic, which, however, had the desired effect of restoring animation, and in an hour after she was altogether in a better condition than she had been hitherto. On the 13th she had another attack of syncope, less severe, and from this also she was aroused by an emetic dose of carbonate of ammonia. From this time she has continued to make daily progress; for several days she took six grains of carbonate of ammonia every four hours, with large doses of wine and whiskey. On the 21st she was improved considerably, natural warmth and heat were restored to the surface; her pulse was 120, but on the least exertion it intermitted and failed in strength; her breathing is easy, and the cough much less. The treatment was altered to chlorate of potass and chloric ether; wine and whiskey being continued. On the 10th of April she is convalescent; there is no evidence of valvular disease of the heart.

I think the diagnosis was borne out in this case *par voie d'exclusion*, and by the fact, that a permanently distended pulmonary artery does exert great pressure on the root of the trachea, immediately above the bifurcation, the point whence the tracheal *rale*

emanated in this case. The non-arterialisation of the blood was, of course, owing to the interruption in the pulmonary artery, not to the pressure on the trachea. The mode of treatment which proved successful in this case tends also, in my opinion, to confirm the truth of the diagnosis.

ART. XVI.—*Clinical Reports and Observations on Medical Cases,* By J. T. BANKS, M.D., T.C.D., King's Professor of the Practice of Medicine, &c., &c.

Empyema—Paracentesis and the Employment of the "Drainage" tube.—To all who are versed in the history of medicine it is well known that the operation of thoracentesis is one which has numbered among its advocates some of the most successful cultivators of the healing art, and it is also matter of notoriety that, owing to one of those revolutions from which even physic is not exempt, it may be said to have for a season fallen into comparative disuse. However, it is again enjoying as high a place in the estimation of practical physicians as at any former period, and it is now resorted to with a confidence in its remedial power fully equal to that which was evidently entertained by practitioners of the olden time.

The recorded cases and observations of eminent physicians at home and abroad have largely contributed to this result, and it is now adopted in many cases with a well grounded hope of success, while in others the not unimportant end is attained of alleviating pain and suffering, and prolonging, though we cannot save, life.

That in a great number of instances the failure of the operation was owing to its being postponed to too late a period, I am perfectly persuaded. The early operation—that is to say, as soon as all reasonable hope of the fluid being absorbed must be abandoned, and before the lung is bound down by unyielding adhesions—is sometimes followed by *complete* recovery; but even when we cannot, from the duration of the disease, look forward to perfect restoration of the function of the lung, present danger may be averted, life may be saved, and even years, in some cases, may be gained. Few physicians who have enjoyed extensive opportunities of treating disease, taking a retrospect of cases of pleural effusion, cannot refer to cases which might have been saved if the operation of thoracentesis had been performed, more especially if the system of drainage, first recom-

mended in chronic abscesses by M. Chassaignac, had been resorted to.

There are many cases on record, in which there was little more than palliation of urgent symptoms anticipated, but which eventuated in restoration to health. In reporting a case of empyema some time since, I observed, "whatever difference of opinion may exist as to the operation being called for under ordinary states of pleural effusion, there cannot be a question as to the propriety of it when dyspnea is so urgent as to threaten life. There are cases when a few days of life are of incalculable importance, and even independently of this consideration, if we can render the few remaining days of life comparatively comfortable and free from suffering, and that this great gain can be obtained by a trivial and almost painless operation, surely we ought not to hesitate." The experience derived from the observation of many cases warrants us, although ultimate recovery is not always a probable event, in holding out the expectation of lengthened days. Legroux performed in one case 24 successive operations. Wunderlich, in his *Handbuch der Pathologie und Therapie*, relates a case of empyema in which he operated three times in the course of six months; before each operation death appeared imminent, but the operation had the effect of prolonging life for one year, at the end of which death ensued, not however from the original malady, but from consecutive Bright's disease. Age, even advanced, should not preclude the operation, or lead us to despair of a prosperous issue; the same author reports two examples of successful result from the operation of thoracentesis in aged persons, one of whom he saw many years after in perfect health.

There are cases in which, from the duration of the disease, we cannot expect expansion of the compressed lung; but still life may be prolonged when a fistula is established. Dr. Wendelstad, of Hersfield, who was himself the subject of the operation of thoracentesis, at the end of 13 years placed his own case on record in the *Journal der Practischen Heilkunde*. For this lengthened period the fluid was drawn off twice each day; sometimes as much as three ounces flowed away, and at other times not more than half-a-drachm. After 10 years, anxious to determine the capacity of the chamber, he injected it with warm water, and found that it was capable of containing one quart; the chest had fallen in and was motionless; but he could blow the flute, walk fast, and, when he published the history of his case, he had been for many years again engaged in active practice

as a physician. How much longer he lived we have no means of ascertaining. The operation of tapping the chest is occasionally performed in cases of pneumo-pyo-thorax, when the disease is the consequence of perforation of the pleura in tuberculosis of the lung. How desperate such cases are, oft-repeated experience informs us; but, nevertheless, Lænnec says, "We must not abandon all hope of cure, even when there exists so serious a complication as this, provided there be no evidence of cavities in the opposite lung." Although, in the great majority of cases of perforation of the pleura, the consequence of tuberculosis of the lungs, or gangrene, there is a communication established with the bronchi, still, we should remember that a tubercle on the surface may be the cause of the lesion, and the effusion of air be the result of the opening of vesicles, as in the case of rupture in emphysema. Of this form, Louis has given some examples.

The following case will illustrate the truth of some of the foregoing remarks, with reference to the value of the operation of thoracentesis:—A boy, aged 14, was admitted into Sir Patrick Dun's Hospital on the 11th of April, 1861, labouring under pleural effusion of the right side; he was one of a family of seven children, all of whom were remarkably healthy; both parents are alive; the father is, and has always been in good health; the mother generally delicate, and has had repeated attacks of bronchitis. The subject of this report had measles and scarlatina in childhood, but recovered perfectly, no delicacy remaining behind; at the age of seven he had hooping-cough, after which, for one year, it is stated that he was delicate, but, at the end of this period, his health was completely re-established, and he continued well until three weeks before his admission into hospital. He is very intelligent, and he gave an accurate history of his present illness. He said he was well previously; that he shivered, and soon after was attacked with severe pain in the right side. The ordinary symptoms of pleuritis followed. For some days before he sought admission into hospital, his respiration was gradually becoming more laboured, and finally the difficulty of breathing became extreme.

The pulse was 132, and the respiration 40 in a minute. On examination of the chest, the right side appeared larger than the left, and, on measurement, it was one inch larger; the intercostal spaces obliterated, and there was no motion. The sound, on percussion, was dull over the whole extent of the right side, and the dulness even transgressed the median line. On applying the hand,

when the patient spoke or coughed, no vibration was perceptible, and the respiratory murmur was absent, no sound being audible, except bronchial breathing at the root of the lung. There was displacement of the abdominal organs—the liver projecting below the false ribs. The decubitus was on the affected side; any attempt to lie on the left produced greatly increased difficulty of breathing.

The symptoms were so urgent that the operation of thoracentesis was determined upon, and I performed it the day after the boy came into hospital. As the fluid flowed, the respiration became more easy, and he expressed himself wonderfully relieved. At the end, the pulse had fallen to 112 and the respiration to 28. The amount drawn off was four pints. The fluid was of a straw colour and perfectly transparent. On the following day the respiratory murmur was audible at the apex of the lung. There was a remarkable amelioration of all the symptoms for about a week after the operation, but soon it became evident that fluid was again being accumulated, and at the end of six weeks it became necessary to resort to the operation of tapping, and the result was in all respects similar. The quantity and quality of the fluid being the same, and the relief as manifest. Again the signs of accumulation gradually showed themselves, and, at the expiration of four weeks, the operation was again performed. At this period he passed from under my care, and my colleague, Dr. McDowell, took charge of him for three months, during which he remained in Sir Patrick Dun's Hospital. The disease continued to run the course I have described. After the third tapping the secretion of fluid took place rapidly, and the symptoms were so urgent that it was found impossible to put off the operation beyond a fortnight.

From Sir Patrick Dun's Hospital he was removed to the Whitworth Hospital, again coming under my care. Four weeks after the last operation he was again tapped, and in five weeks the operation was repeated now for the sixth time. The average quantity was about five pints, and the fluid retained the same character which distinguished it at first; it was straw-coloured serum, transparent, and without a trace of pus. In three weeks the operation was repeated, and on this occasion the fluid was sero-purulent. The fluid rapidly accumulated, and the respiratory distress was so great that the operation was urgently demanded on the eighth day. The fluid was purulent, but free from disagreeable odour. The case appeared at this stage likely to terminate fatally, if some measure were not adopted to prevent the recurrence of the

effusion; the strength had been latterly failing in a marked manner, and the respiratory distress increasing. Under these circumstances I determined to have a counter-opening made in the chest, and a drainage tube introduced. The operation was performed by my colleague, Professor McDowell, on the 24th of October, 1861.

I was induced to have recourse to this operation from seeing a report of "two cases of empyema illustrating the advantage of making two openings, and adopting the plan of 'drainage' in the operation of paracentesis in that disease," by Dr. Goodfellow, of London. On reading the history of these cases in the 42nd Vol. of *Medico Chirurgical Transactions*, I was convinced of the advantage of the plan proposed, and that the case under my care was peculiarly adapted to it; it was, in point of fact, a much more favourable case than either of Dr. Goodfellow's, and more likely to terminate in recovery, particularly if the operation had been performed at an earlier period, but I had not seen the report of Dr. Goodfellow's cases until the boy had been tapped seven times. The question which we had to consider was, whether it was not too late to expect any advantage from the drainage plan. However, unpromising as the case was, I determined to give the patient a chance.

Before detailing the further course of events in my case, I may refer to Dr. Goodfellow's report. The first case was a boy of 17, a member of a strumous family, who, at the age of 12 had measles, followed by inflammation of the lung, terminating in abscess. He had subsequently empyema, which pointed, and a large amount of purulent matter was discharged. Upwards of two years after the fistula was established, the boy came under Dr. Goodfellow's care, who says that there was considerable emaciation, occasional hectic flushing, legs and feet œdematous, difficulty of lying in the recumbent posture, frequent cough with copious purulent expectoration. The affected side was flattened, and measured an inch less than the opposite, the opening red, irritable, and discharging very offensive pus. The physical signs were, dulness on percussion at the apex, lower down a tympanitic sound, and below a dull sound which was replaced by a tympanitic sound on his lying down. Amphoric respiration, voice, and cough also existed. A counter-opening was made in the chest, and the drainage tube introduced, and Dr. Goodfellow says "the success of the experiment exceeded our most sanguine expectations." The discharge, which was intolerably stinking, was reduced in quantity, thick, and nearly free from odour.

The improvement in his general health was rapid, the œdema of the legs quickly diminished. At the end of three months the discharge was reduced to two or three drachms in the twenty-four hours.

The second case given by Dr. Goodfellow was one of the most unfavourable which can be well conceived. Dr. Watson, who saw the young man before his admission into the Middlesex Hospital, concluded that he had pneumothorax, and that a communication had been made between the lung and the cavity of the pleura, in the progress of tubercular disease. He had had profuse hemoptysis. Subsequently there was indubitable evidence of effusion in the left pleural cavity, there was also evidence of tubercular consolidation of the apex of the opposite lung. Dr. Goodfellow hesitated as to the propriety of recommending the operation, owing to his belief in the tubercular origin of the empyema. The lung had been compressed by fluid for more than a year. The operation was however performed—paracentesis by a double opening and the drainage tube. The result was similar to the former; the patient gradually improved in health. This second case is most valuable, as affording an illustration of the benefit derivable from the operation, even under circumstances which might well be looked upon as affording the least possible ground for hope. Even, then, in pneumo-thorax with effusion, the consequence of tubercular disease, operation is not only justifiable, but may in some instances save life.

I have no experience of the effect of iodised injections in the treatment of empyema, but the practice is strongly recommended by Trousseau, whose opinion, on all subjects connected with practical medicine, is worthy of the greatest respect. He reports three cases of hydropneumo-thorax, treated by paracentesis thoracis, and injections of iodine, which have had a successful issue, (*L'Union Medicale*). The injection which he uses is composed of equal parts of water and tincture of iodine (5 grammes of each), with 2 drachms of iodide of potassium. It appears to me that the iodised injections might be employed with advantage in cases treated by the drainage plan in the first instance. When the size of the original cavity has been considerably reduced by the expansion of the lung and the falling in of the chest, but that still the discharge goes on, the case might be brought more rapidly to a favourable termination by the withdrawal of the tube, and then washing out the cavity with tepid water, and subsequently injecting with the solution. In my case I have been thinking of having recourse to it. It is now more

than five months since the last operation was performed and the drainage tube introduced, and there is still about from two to three drachms of purulent matter coming away daily. The chest has fallen in considerably. The right side measures one inch and a half less than the left, the heart is displaced, being drawn to the affected side. There is respiration audible in the upper region of the right side, in front above the nipple, and posteriorly over a like extent. The left lung appears to be in a state of perfect health, and well performs its functions.

There was one phenomenon noticed in this case repeatedly, not only by myself, but by my colleagues, Drs. McDowell and Gordon, namely, the presence of amphoric respiration, voice, and cough. This is a confirmation of the correctness of Skoda's views on this subject. He does not consider a communication with the bronchial tubes essential to the production of resonance, but believes that the vibrations of the voice transmitted through the pleura produces consonating vibrations in the air contained in the cavity. In this case there was not the slightest ground for suspecting a communication with the lung. No air existed in the pleura until after the operation of thoracentesis.

In advocating the operation of tapping and the use of the drainage tube in some cases, I do not wish to be supposed to undervalue the preparations of mercury and iodine, used both internally and externally for the resorption of the pleuritic exudations. The power of these remedial agents is well known, and fully appreciated, but they will often disappoint, and then we must not postpone the operation too long. Dr. Goodfellow would restrict the employment of thoracentesis and the drainage plan to the cases of pleural effusion, which may be correctly designated pyothorax. He would exclude cases of serous effusion. In this opinion I do not concur; and the case I have before me is one in point. When, after we are satisfied that there is no chance of absorption—the fluid collecting after each operation—why wait until it becomes purulent? I believe the early adoption of the drainage plan will give a better chance of success; and I may mention that I have been in the habit of using Dr. Wood's instrument for the purpose of determining the quality of the pleural fluid, and it answers admirably as a means of exploration.

As to the general treatment of this case, which is still under my observation, it will suffice to say, that it has been to the fullest extent of a sustaining character; the boy had the most nutritious, diet, with a liberal allowance of wine, and for a very considerable

period he has taken cod liver oil. He is now steadily gaining ground. He walks out daily, and he is altogether in a most satisfactory state.

Touching his future, and that of similar cases, the law laid down by Louis, and confirmed by the experience of Aran, is not consolatory, namely, that uncomplicated pleurisy is always at the left side. The latter goes so far as to affirm, that the existence of the disease at the right side indicates the presence of tubercles in 95 cases out of a 100. He strongly advocates the operation of thoracentesis, regarding it as one of the greatest triumphs of our art, and one of the most powerful therapeutic agents we possess.

In conclusion, I have to observe, that the issue of this case and of those published by Dr. Goodfellow, is calculated to inspire hope from the operation when all other means fail. How unlikely was my own case to turn out well, may be judged from the fact, that it was suggested to me, that having recourse to the drainage operation would be likely to throw discredit on the new plan—so unpromising was the aspect of affairs.

My friend, Dr. McDowell, has favoured me with the following notes of the operation and of his views as to the best manner of performing it, which I consider a most valuable contribution.

In the case of Hill, the drainage tube was introduced into the pleura in the following manner:—

"The cavity of the chest was directly punctured with a bistoury between the fifth and sixth ribs, in the vicinity of the nipple, and about the same place where paracentesis had been repeatedly performed, both by myself and by Dr. Banks. Thin pus escaped in considerable quantity; a 'bullet probe,' about 10 inches in length, to the eye of which the drainage tube was fastened, was then introduced, and directed towards the point where the counter opening was intended to be made; owing, however, to its length and slender construction, the instrument could not be made to press against the parietes with force sufficient to enable it to be felt with the finger from without. A steel sound was, therefore, introduced instead, and with this instrument we found that the interior of the pleura could be satisfactorily explored. The point of the sound was now pushed against one of the lowest of the intercostal intervals, and could be plainly felt whenever the handle of the instrument was depressed; a small incision was then made over the rounded end of the sound, which was pushed through the opening from within. It was then evident that the solid sound, however suitable as a guide

for making a counter opening, was not adapted for completing the desired object, as the drainage tube could not be attached to it; it was therefore withdrawn, and the long probe, armed with the tube, was again introduced, but great difficulty was experienced in finding the second orifice. After some delay the probe was at last guided to the opening, on a director being introduced from without to meet it. From the unexpected difficulty which was experienced in finding the second orifice from within, it is obvious that the instrument which is employed in the first instance as a guide for the counter-opening, should be such as will allow the drainage tube to be fastened to it when it is made to project through the pleura; so that, on its being withdrawn, the tube which follows in its track would be left *in situ.* A 'Brodie's Catheter' would, I believe, fulfil every indication; and should I have occasion again to perform this operation, I would proceed in the following manner:—

"A direct opening being made into the pleura in front, with a bistoury, the catheter would be introduced; the cavity could then be rapidly explored, and the position of the upper surface of the diaphragm determined. Guided along the surface of the diaphragm, the catheter would thus be directed towards the outer and lower part of the chest, and the point made to press against an intercostal interval, as near the diaphragm as possible, so as to be felt from without. A 'Brodie's Catheter,' being furnished with a broad flat handle, would admit of this very essential part of the proceeding being done with great facility. The counter-opening would then be made by cutting on the point of the catheter sufficiently to allow it to be pushed through the wound. The drainage tube being attached by a silk thread to the eyes of the catheter, on withdrawing the latter, one end of the tube would be carried after it into the pleura, and out at the opening which was first made."

Art. XVII.—*On a Double-bell Stethoscope.*
By Robert D. Lyons.

The frequent necessity of comparing and contrasting sounds of delicate character at opposite sides of the chest, or in different portions of the vascular system, led me, some years since, to invent a form of double stethoscope, which appears to me to possess some practical advantages in diagnosis of both heart and lung diseases.

Inspection of the accompanying figure will readily convey an idea of the form and uses of this instrument. It is fashioned in gutta percha, and, being somewhat flexible, easily admits of adaptation of its two bells to the parts about to be examined.

A little practice will enable the observer to distinguish the sounds conveyed by the two branches of the instrument respectively. Sounds emanating from opposite or distinct points can thus be submitted to careful comparison and analysis by the *same* ear. The comparative *tone*, *intensity*, *duration*, and other characters of pulmonic, cardiac, or vascular sounds, can thus be judged of with perfect accuracy.

The following are some of the purposes to which the double stethoscope may be applied:—

The estimation of the comparative force, intensity, duration, loudness, and other acoustic characters of the inspiratory or expiratory sounds, in the supra or infraclavicular spaces, in cases of suspected phthisis in the now so-called *pretubercular* stage, and in which very slight departures from the normal condition of the respiratory sounds, in one or both of the lung apices, are the only phenomena to be expected.

I anticipate that the instrument will prove of great value in this class of observations in experienced hands.

In estimating the relative intensity of the respiratory sounds in both lungs, at any two corresponding parts of the chest, in cases in which deeply-seated tumours, cancerous, aneurismal, or of other nature, may be suspected to exist, and in which, by pressure on a bronchus, they produce inequalities of respiratory sounds in parts, or throughout the whole, of either or both lungs.

In comparing and estimating the characters of the aortic and cardiac sounds in suspected cases of valvular or aortic lesion, or in cases in which aneurismal dilatation or actual aneurism exists. The phenomena of two distinct pulsatile centres within the cavity of the chest, with, as it often occurs, sounds and impulses of very distinct character, can thus be most strikingly demonstrated.

Aneurism, or other pulsating tumours in the region of the neck, or axilla, in the cavity of the abdomen, or in the iliac or femoral regions, can likewise be submitted to careful acoustic analysis by the double stethoscope, and the intensity or other characters of these phenomena can be thus, with the utmost accuracy, contrasted with those of the heart or the aorta.

Many other applications of the double stethoscope will, doubtless, occur to the practical physician.[a] A modification of the double-bell stethoscope, in which the bells are made of the form of an elongated ellipse, will be found useful in exploring the chest, when much emaciation exists. A similar modification of the ordinary single-bell stethoscope has been effected at my instigation. It will be found very convenient for the examination of phthisical patients, or others in whom there is much emaciation, as it adapts itself readily to the intercostal depressions. The elliptical bell is also well adapted to the acoustic examination of arteries and veins.

[a] This instrument was first manufactured (1849) for me, under the superintendence of the late Mr. Kane, whose premature death, shortly afterwards, chemical science in Ireland has deeply to deplore.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Sulle Malattie da Fermento Morbifico e Sul loro Trattamento. Memoria del Dr. Giovanni Polli. Milano. 4to, pp. 60.

On Diseases Depending on Morbific Fermentation, and their Treatment. Memoir of Dr. G. Polli. Milan.

The work before us is a most interesting monograph on zymotic diseases, strictly speaking; or, on such diseases as date their existence from the presence of a fermenting or catalytic principle, either generated spontaneously in the system, or introduced from without.

Among zymotic or catalytic diseases, are classed almost all the most fatal maladies to which the human frame is liable: cholera, typhus, puerperal fever, glanders, black vomit, dissecting wounds, marsh fevers, &c., &c. If the author's experiments can be relied on, and they seem to have been conducted with great sagacity and care, such diseases would be no longer fatal, they would be as amenable to treatment, as many other ailments of daily occurrence, and of which we take but little note; and the remedies which cure those fatal diseases, when developed, would, in addition, seem to be capable of acting as prophylactics against them.

If Dr. Polli's investigations are correct, and his results unquestionable, a new era opens out in the history of medicine; and as vaccine banished small-pox from the civilized portions of Europe, so would the adoption of his remedies, render an army safe from the devastation of typhus; a military hospital from the scourge of infectious gangrene; a lying-in establishment from the dreaded puerperal fever; and the public schools from the ravages of scarlatina. The subject is of such importance, that we shall abstain, as much as possible, from comment, and rather give to our readers in a condensed form, and, as far as we can, in the author's

own words, an account of his labours, his investigations, and his experiments.

Dr. Polli commences by establishing the great importance of fermentation in catalytic actions, he says:—

"By catalysis, fatty principles which are insoluble, are rendered soluble (glycerine, for instance); some bitter principles, as salicine, are rendered sweet (glucose); some inodorous substances, myrotic acid, for instance, are changed into odorous essences (oil of mustard); many neutral substances, as urea and allantoin, are changed into energetic alkalies (ammonia); some inert principles, or of weak nutrient capacity, as starch, are changed into inebriating substances (alcohol); and, finally, some principles of very slight action on the human economy, as amygdaline, are changed into energetic poisons (oil of bitter almonds and prussic acid)."

Further on he says:—

"Different putrescible organic substances will, therefore, be capable of producing divers *morbific ferments;* or, perhaps, even the one organic principle, during different stages of its decomposition, may be capable of producing the same varied effects; and if, in a healthy animal, some such putrescible substance should be introduced, either by the lungs, the gastro-enteric tube, or by the cutis, or by injection, or by inoculation, such substance being in a state of decomposition, different from that which should correspond with a normal physiological metamorphosis, its introduction would give rise to serious disturbance in the composition of one or more of the fermentable components of the body; in such cases the *morbific ferment* would be introduced from without. But should the natural metamorphosis of the putrescible substances of our organism deviate from its normal course, either in consequence of atmospheric vicissitudes, great fatigues, insufficient exercise, mental anxieties, or in consequence of suppressed secretions or excretions, such deviations may give rise to compounds capable of effecting abnormal modifications in the putrescible components of our body, and in this case the *morbific ferment* would originate within the living frame. . . . . The change which takes place in the human economy, in either of these cases, is simply due to a catalytic action; I shall, therefore, for the sake of brevity, and also, at the same time to indicate their proximate causes, name all diseases arising in such manner *catalytic diseases.* Catalytic diseases are truly diseases of blood poisoning, for it is in the blood that the morbific ferments are generated, or introduced. . . . . I shall illustrate this operation by quoting some experiments of Schmidt (*Ann. di Chim. appl. alla Med.*, vol. xxiv., p. 59). Blood, fresh drawn from the vein of a

healthy man, will not cause either sugar, urea, amygdaline, nor asparagine to ferment. If the same blood be left exposed to the air for a few days, a principle will develop itself in it, which will be capable of determining alcoholic fermentation in saccharine substances; and after fourteen days' exposure another principle, capable of causing both urea and asparagine to ferment, will be formed. Such blood, however, kept over so long, will not become capable of inducing amygdaline to ferment.

"Blood drawn from the veins of persons labouring under various diseases, including cholera, induces fermentation in a few hours, not only in sugar and urea, but also in amygdaline.

"From these experiments I conclude, that the albuminoids of the blood, can, under certain conditions, undergo such change as to give origin to specific ferments, which do not exist in normal healthy blood; and that during certain diseases, it not only has a greater tendency to produce these ferments, but will even give rise to others, both different and more active, than such as would arise from the simple spontaneous alteration of normal blood.

"Experiments carefully practised on animals, have given the following important results:—

"1st. That the injection of a certain quantity of pus into the circulation, produces pyemia, and such diseases as are characterised by multiple abscesses.

"2nd. That the injection of putrid matter, produces septicemia, or those diseases recognised by the name of putrid infections, and which are characterised by typhoid gastro-enteritis.

"3rd. That the injection of matter obtained from contagious diseases, glanders, for instance, will reproduce the same affections.

"The injection of from two to four grammes of corrupted human pus, into the veins of a dog of medium size, and weighing about six or seven kilogrammes, almost always induces vomiting, after a few moments, often followed by alvine dejections. The dog looks stupid and weary, and stretches itself on its side, its breathing gets hurried, it will neither eat nor drink, and thus it remains for two or three days. If the lesser quantity (viz., two grammes), of pus have been injected, then the dog, about the third day commences to improve; it will take a little food, will move itself a little, and altogether look more lively, and by the ninth or tenth day, it will be so much better, as to be considered quite convalescent; the wound also, through which the injection was practised, and which, at the commencement, had suppurated and spread itself, will now have begun to get small, and will show symptoms of cicatrization. If, however, the larger quantity (four grammes) shall have been injected, the dog will become daily worse, presenting all the symptoms, and running through all the stages, of typhoid fever; it will keep constantly lying down in its kennel, in a sort of stupor; it will take no food; it

often suffers from bloody stools; the wound through which the injection was practised becomes livid and gangrenous, and the dog dies between the fifth and seventh day after the operation. At the *post mortem* examination the gastro-enteric tube is found in a general state of inflammation, the mucous membrane of a dark red colour, here and there dotted with puriform exudation, at times mixed with ulcerations, especially in the neighbourhood of the pylorus, and in the cecum; the lungs are found full of ecchymotic spots, and the blood contained in the larger vessels, and in the right cavities of the heart, is tarry and liquid.

"The injection of from one to three grammes of putrid blood, into the veins of a dog, produces a typhoid disease, very similar to that produced by the injection of pus, but of much more serious character. If the lesser quantity be injected, the dog rarely vomits, but remains stupid and motionless, standing on its four legs, hanging its head down, and will remain so, at times, for hours; eventually it lies down, and for several days it will neither eat nor drink, the wound, during this time, becoming large, livid, and sanious. By slow degrees, in the course of eight or ten days, the dog improves, but during its entire illness, its complete prostration of strength, together with its comatose state, fully recal to one's mind the characteristics of adynamic fevers.

"If, however, the larger quantity of putrid blood, viz., three grammes, have been injected, the dog both vomits and defecates, generally within a few minutes, and the successive conditions of stupidity, prostration and coma, are more strongly marked; the dog lies on his side, with his legs stretched out, as also his head and neck; the wound assumes a sanious and often a gangrenous appearance, and about the third, fourth, or fifth day after the injection, the dog dies. At the *post-mortem* examination the entire gastro-intestinal tract exhibits the appearance of a violent attack of gastro-enteritis, the mucous membrane of the stomach and the intestines being deeply injected, dark red, and in some spots ecchymotic and bloody, the most inflamed portions being the stomach, in the vicinity of the pylorus, the duodenum, and the rectum.

"The injection into the veins of a dog, of the discharge collected from the nares of a glandered horse, even where only the small quantity of *half a gramme* is used, gives rise to the following phenomena. Immediately after the operation the dog generally vomits, this is followed by utter prostration of strength, laboured respiration, distaste for food, rapid wasting away, the formation, here and there, under the skin and between the muscles, of numerous unhealthy (*marciosi*, *putrid*) abscesses, which, when laid open, exhibit a lardaceous base, analogous to syphilitic ulcers in the human body; after death numerous clots are found in the lungs, much more numerous and better marked than in the case where pus was injected. These are not merely ecchymotic stains, but real clots,

often softened in the centre, and even at times converted into purulent cavities.

"The summary conclusion of my experiments, of which I have now only given a slight sketch, is, therefore, that by means of injections into the blood, with the above mentioned morbific matters, very serious and well marked forms of disease can be produced, exhibiting all the general characters of catalytic diseases."

Once admitted, that catalytic diseases depend on the presence and action of specific ferments in the blood, the question then arises, whether it would be possible to neutralize them, and render them inactive, when once introduced or self-developed in the living body. Dr. Polli answers in the affirmative, notwithstanding the assertion of Claude Bernard (whom he calls the greatest living physiologist), who, after establishing the fact, that fermentation may arise in the blood, and give origin to poisonous principles, which may, in their turn, produce certain grave accidents in the living frame, adds:—"La neutralization des ferments *est impossible*, parce que pour cela, il faudrait changer les propriétés du sang à tel point, que la vie ne serait plus possible (Leçons sur les éffets des substances toxiques et medicamenteuses, p. 99)."

Dr. Polli believes that we possess in sulphurous acid, when combined with salifiable bases, a means of controlling and neutralizing morbid ferments in the blood of living animals, without, in any way, vitiating its qualities so as to render it incapable of maintaining life. After carefully studying the action of sulphurous acid, on organic matters, and fermenting principles, in particular, our author came to the conclusion, that not only it alone, but also its combinations with earths and alkalies, such as the sulphites of soda, postash, magnesia, and lime, possess, in a supreme degree, the power of arresting all known organic fermentations, and putrefactive metamorphoses of animal solids and liquids; and that its action does not depend on its decomposing the fermenting principle, but simply by modifying its molecular aggregation, so that it never acts as a poison on the living organism, as do many other substances, well known for their antiseptic properties, but which, on account of their poisonous effects, can not be employed with safety. He says:—

"I made several experiments with healthy dogs, for the purpose of determining the quantity of sulphites of soda, potash, magnesia, or lime, which could be safely administered, and I found that a dog weighing

from seven to eight kilogrammes, could not only take, with perfect safety, from one to fifteen grammes of such salts, but also without the slightest inconvenience; and a dog of about the same weight, took during fifteen successive days, as much as ten grammes of these salts daily. Sulphite of lime appears to be even better tolerated, as on one occasion I gave to a dog of about eight kilogrammes weight, as much as fifteen grammes of it at a dose, and it did not appear to suffer the least inconvenience. I killed several healthy dogs during these experiments, for the purpose of examining the state of their stomach and intestines, and I constantly found them in a perfectly normal condition.

"Having thus determined the harmless action of these salts, I endeavoured to trace their course through the living organism, and determine, if possible, by what way, and in what condition they are eliminated from the system, and I found that they remain as sulphites much longer than might have been supposed, from their aptitude to become sulphates during the oxidizing process of life. I found *sulphites* in the urine, for many hours after their ingestion, and not sooner than after a lapse of twenty-four hours did I find them in the urine as *sulphates*. The following experiment will prove interesting;—I took three dogs in good health, and of about the same weight and stature, to one I gave fifteen grammes of sulphite of soda, in the course of twenty-four hours, one gramme at a time, wrapped up in a pellet of sausage meat; to another I gave fifteen grammes of sulphite of magnesia, in the same way; and to the last I gave the same food, but no sulphites. The three dogs were put to death at the same time; I collected the blood and the urine of each separately, together with the liver and one hind leg, without the skin; I easily detected the presence of the sulphites, in every one of the fluids and solids of the dogs to whom they had been administered, while I failed in detecting even a trace of sulphurous acid in the remains of the third dog. All these samples, liquid and solid, were then left exposed at a temperature varying from 12° to 15° centigrade, and after five days the urine of the third dog exhibited a highly ammoniacal odour, and its liver and leg gave evidence, by their smell, of impending decomposition, while those parts which had been taken from the dogs who had received the sulphites, still remained perfectly fresh."

These results confirmed my theoretic opinions, and I concluded, that if sulphites taken by the mouth, could so modify the tissues of a living animal, as to give them the power of resisting, for a longer period, the putrefactive fermentation after death, so might the presence of these same sulphites in the living tissues, enable them to resist, during life, the action of those morbific ferments which constitute the essence of catalytic disease."

The author's memoir concludes with the details of sixty-eight

experiments, made upon living dogs, which we do not think it necessary to transcribe, they were carried on evidently with great care; one half of the dogs experimented on, were left to the effects of the poisonous injections without any remedy being administered; the other half were treated with sulphites. The results were various, and that fact tends, in our minds, to increase the value of these experiments. Two dogs, weighing respectively nine and four kilogrammes, received each an injection of four grammes of normal pus, in their femoral vein. The largest of the two, during the three days preceding the operation, took eighteen grammes of sulphite of soda, and during the two days which followed it, ten grammes more. For ten days the dog continued in very tolerable health, it then began to refuse its food, became drowsy, and two days later it died, in consequence of hemorrhage from the wound. The *post-mortem* revealed a state of enteritis, and melena of the rectum. The lesser dog got no sulphites, nor any other treatment, it became ill, but after a few days began to mend, and on the tenth day might be considered cured. This same dog, after having perfectly recovered, was treated to a fresh injection, but this time instead of healthy laudable pus, as in the last experiment, was injected with some putrid pus, long kept. The wretched animal died in three days, and at the *post-mortem* there was found inflammation of the lungs, with scattered pulmonary apoplexy, and gangrene of the wound in the thigh. Several dogs were prepared with different quantities of sulphites, for several days previous to being injected with putrid pus; the result was, that those which had received the smaller doses of sulphites died, while those who had been liberally supplied with them recovered, and the rule seemed to be pretty constant, that the more pus was injected, the greater quantity of sulphite was required to antagonize it. Several dogs were injected with putrid blood, they all, with one exception, died. Other dogs prepared with sulphites and then injected with the same blood, all recovered, as well as some dogs, who were injected with putrid blood, diluted with twice its bulk of solution of bisulphite of soda. A number of dogs were similarly treated, with the discharge collected from a glandered horse, and the result was the same.

We have read this memoir with great interest, the reasoning is plausible, the experiments crucial, the results most satisfactory; and averse as we most sincerely are to all kinds of torture, and though we strongly set our face against vivisections, yet, in this case, we cannot refrain from expressing a wish that these ex-

periments, and analogous ones, may be soon carefully repeated in order to test their real value. Not many months ago, we had to deplore the loss of a highly promising young man, resident pupil in one of our largest hospitals, who died from diffuse inflammation, from a puncture received in the discharge of his duties. If Dr. Polli's experiments can be relied on, we had a remedy at hand, which could have saved that young man's life. Another practical use, to which we would be glad to see these sulphites put, is the preparation of subjects for dissection. Very rarely does the diligent pupil and assiduous dissector, go through his term of study, without suffering, in some shape, from the constant inhalation of the products of decomposition. In fever wards the night chairs might always have a certain quantity of a solution of a cheap sulphite in them; vast suppurating surfaces and cancerous wounds might be dressed with the same, in short, the uses of these substances, when once proved to be efficacious, would be as universal as they would be valuable. In conclusion we would say, that if the author has not deceived himself in his experiments, nor over-rated the value of these substances, but has really discovered in the sulphites, a remedy for catalytic diseases, and a prophylactic against them, he has conferred a boon as great, or perhaps even greater, than did Jenner by his great discovery of vaccination.

On Uncontrollable Drunkenness, relative to Medico-legal Arrangements. Read before the Social Science Congress, 1861. By Thomas Lewis Mackesy, M.D.

On Chronic Alcoholic Intoxication, or Alcoholic Stimulants, in connexion with the Nervous System. By W. Marcet, M.D., F.R.S., Fellow of the Royal College of Physicians, &c. London. 1860.

Some Facts which suggest the idea that the desire for Alcoholic Stimulants is not only transmitted by Hereditary Descent, but that it is also felt with increasing force from generation to generation, and thus strongly tends to deteriorate the Human Race. A Paper

read before the Dublin Statistical Society, on the 15th of February, 1858. By JAMES HAUGHTON.

The City—its Sins and Sorrows, &c. By THOMAS GUTHRIE, D.D., Edinburgh. 1857.

Reformatories for Drunkards.—Beyond all controversy it is necessary that something should be done, if not to control and destroy, at least to prevent many of the evil results of drunkenness. We may be met by the assertion that this vice is not so frequent or so general as it was a century ago. Grant it for the moment; yet nothing is better established than the fact that thousands are every day rushing on to destruction, and involving the innocent and helpless in most of the consequences of their lamentable propensity.

Regarding this, our national sin, Divines have preached; the Legislature has enacted laws; Sanitary Philosophers and Physicians have written, taught, and practised; Temperance Societies have laid down rules and administered pledges; Orators have thundered; Parents have whispered, commanded, prayed; with what result? very little indeed, if we regard the many and mighty agencies in operation against it. Like other things in the world, most of these agencies have failed, because along with truth they have inculcated some fallacy.

The Divine denounces the continuous habit of inebriation as a sin (which, in the first instance, it undoubtedly was in every case), but he fails in the means he recommends for its cure—the forsaking of it.

The Legislature enacts, that no crime is excusable because committed by the man when in a state of intoxication, but rather the reverse; it punishes the drunkard in various ways, but the gaol never teaches him to forsake his sin.

The Sanitary Philosopher comes very near the mark; he investigates the many causes of this vice; he finds that some have an undoubted *hereditary* tendency to it; some are driven to the tavern by the want of comfort at home;[a] a poor man because his home is cold and dreary, his wife thriftless, his children are domestic nuisances, his meals insufficient and badly prepared, because he has no recreation there, nothing but dull misery always before him; one of the "better class," as we term it, treads the same path to

[a] See Mr. Nugent Robinson's Essay "On the Condition of the Dwellings of the Poor in Dublin, &c.," read at the Social Science Congress, 1861.

ruin because his parents never think of youthful tastes and pursuits, never try to make his home comfortable and a more desirable place to him than any other; or, perhaps, if a married man, because his wife is a worthless idle woman, reads novels, lives in the clouds, is ever complaining, but never realizes the world we all live in.

Again, this Sanitary Philosopher finds that the want of education and public institutes for rational recreation and refreshment, is a fruitful source of drunkenness, the tavern supplying all these defects; that the wofully bad education of most classes of women is another cause, whether this be taken to mean education in the ordinary meaning of the term or simply in housekeeping. The very knowledge of these causes supplies suggestions as to their remedy; yet he fails, because these can only be carried out by public authority, whether in the form of legal enactment or by the pressure of public opinion.

Further, the Physician has taught, written, and practised on this subject. He may write and the public may read; he may strongly recommend while the patient secretly evades his recommendations. He may treat cases of confirmed drunkards as those of bodily disease, of mental, of both, of neither, of hereditary tendency, of irresponsible agency, all with some measure of success; yet he cannot enforce his advice or practice, and therefore, as we well know, many of his patients relapse, and their end is worse than their beginning.

Temperance Societies have laid down rules and administered pledges; the good thus done is incalculable; they are right in inducing men to give up sinful indulgence, but they err in enforcing total and ascetic abstinence as the means to that end; they err in describing alcoholic agents as poisons, as things which, under any circumstances, or in the smallest degree, are injurious to health; they err, in fact, in describing the moderate use of any of God's gifts as sinful. An able writer says—" It is much more easy to get the drunkard to abstain than to be sober. . . . Indeed this is so notoriously the case, that *all* persons (however moderate their morals), who have set themselves seriously to reform their characters from habits of vice long indulged, are obliged (at least at first), as a matter of prudence, to practise some degree of asceticism; to deny themselves certain lawful enjoyments in some circumstances, lest old associations should draw them back into what is unlawful. Men of discretion practise such exercises, not because they deem the things forborne unlawful in others, but unsafe to themselves;

in the same way that the diet of a person in full health is unsuitable to the convalescent. But it is much more flattering to a man's vanity (and therefore more agreeable to most persons), to believe that the austerities, which his own previous vice and present frailty render necessary, are themselves the highest and most perfect virtue; that living in an hospital is the best indication of health."[a]

Temperance Societies err also, in affirming that abstinence (for it is not *temperance* they want) constitutes a *cure* for drunkenness; as well may one who has long imbibed some poisonous agent expect that sudden abstinence from it will cure him. By no means; other remedies, both medical and dietetic, must be adopted for this purpose.

Against this vice Orators and Oratresses have thundered; with what effect? The great majority, like most people who hear good sermons, consider the speeches very fine, the arguments very cogent, the examples very horrible; but there the matter ends; no practice comes from all the talk, and here, as in everything else, "man thinks all men mortal but himself." Moreover, parents have whispered words of caution to the erring son, they have commanded him to abstain, have threatened, have punished, and, as a last resource, have prayed the wayward child, by his love for them, by his fear of disgrace, by his danger of losing reputation, by all his hopes for this world and for the next, to give up the cursed indulgence They have sent him to the world's end, he has come back unchanged; they have spent all their substance upon him, but their every effort, every power, every prayer, has been in vain.

Now seeing that all these agencies have, to a lamentable extent, failed to crush drunkenness, and so failed to prevent untold miseries to the families of thousands, we hold that the time has come for some institution or asylum to be erected, by authority of the legislature, for the reception and treatment of confirmed drunkards. Let it be called a lunatic asylum, for many drunkards are really lunatics, as we shall presently show; or, if that name be objectionable, let the modern and more fashionable word "Reformatory" be adopted. The principle for which we contend is, that drunkards who are injurious to the lives and properties of themselves or others should be placed under forcible restraint, and there kept until, by medical and moral treatment, they are cured.

[a] Introduction to a Selection from Aristotle's Ethics. By Bishop Fitzgerald (Killaloe).

The principle of a reformatory will be found to contain, for this purpose, every excellency of the agencies already referred to, and to be free from their defects. If the drunkard be a responsible agent who drinks when he could keep sober, it restrains him; if he be physically diseased or poisoned by long indulgence in the habit, so that he *must* drink to attain any degree of comfort, it restrains him, while it gives antidotes to the poison, treats his body for a disease, and endeavours to restore him to that soundness of health in which we will have no desire to indulge in this more than in any other kind of sin. If he be morally insane, that is to say, reduced to such a state of mind that, contrary to his judgment, he feels compelled to drink, it restrains him as a gaol can, but also treats him as being something else than a criminal, which a gaol cannot. It will be found, in fact, to embrace the functions of the Divine, the Legislator, the Physician, the Total Abstinence Society, the Temperance Orator, and all the other means usually resorted to for the attainment of the same end. But these are such as relate only to the individual. Look what advantages to society such an institution would secure; property saved from destruction, the hopes and prospects of families preserved from desolation, wives rescued from poverty, husbands from shame, children from beggary and disgrace, with many others too numerous to mention, but readily called to mind.

This is one of the questions of the day. In the Social Science Congress papers are annually read advocating some such measure; and if the writers differ as to detail this does not weaken the case, but shows strongly what must be admitted to be the evident disease, and the general agreement as to the principle of its treatment.

But the question will be asked—"What classes of drunkards will you commit to such Reformatories?" Cases of delirium tremens (from drinking) should not be so committed, because they fall within the ordinary province of the physician, and are recoverable by medical treatment. A second class is that of persons who, not habitually but occasionally, get drunk at festive meetings, public dinners, and the like. Now a man in such case is directly amenable to the laws of God, of the land, and of good society; he is perfectly responsible for his act, he cannot plead the force of habit, and even though he should, from any given excess, get a fit of that temporary mental derangement called delirium tremens, yet he, and all like him, should be excluded from the proposed reformatory.

With regard to the many who daily consume large quantities of alcoholic drinks, without any ill consequences save to their own health, not even becoming intoxicated, though often taking much more than those who become so, it is plain that no legislative interference is required. Of course such conduct lays the foundation of many diseases, and transmits them to posterity; but in this case the law cannot control or rule the man. Let any one read Carpenter's well-known *Physiology of Temperance and Total Abstinence*, and count by number the diseases induced by alcoholic excess. The medical man will there see catalogued many of the ills the flesh is heir to; indeed it may be truly asserted that by far the greater number of diseases are the fruits of intemperance, of our own unbridled passions, or of the sins of our fathers.[a]

Here we are reminded of one large class of drunkards, those who *inherit* a decided craving for spirituous liquors. Mr. James Haughton, in a paper read before the Dublin Statistical Society, (February 15, 1858), argues, that not only is such desire transmitted by hereditary descent, "but that it is felt with increasing force from generation to generation, and thus strongly tends to deteriorate the human race." In this paper he quotes, as an authority, Macnish, in his *Anatomy of Drunkenness;* also Darwin, beside Mons. Morel's *Physical, Intellectual, and Moral Degeneration of the Human Race;* Dr. Whitehead, *On the Transmission from Parent to Offspring of Forms of Disease, and of Morbid Taints and Tendencies;* and *The Races of Man, a Fragment*, by Robert Knox, M.D. The causes which contribute to this deterioration are too numerous to mention here. The mode of argument adopted is, that taking those countries where spirituous liquors are most consumed, we find the people most physically and mentally degenerate. He gives the following extract from Mons. Morel as a summary of the argument:—"We have no need of further proof, to demonstrate the fact that the use of toxic inebriating substances gives rise in the race, to the same pernicious effects as result to the individual. They have invariably the same character in all latitudes. . . . New maladies are generated, and old ones take on increased fatality; the mean duration of life is lessened; the viability of new-born children is gradually less and less to be depended on; and disturbance of the moral and intellectual nature becomes at length signalized by the highest rates of insanity, of suicide, and crime."

Should those, commonly termed insane drunkards, be committed

[a] See Watson's Lectures, &c., Vol. i., p. 15, 4th Edition.

to these reformatories? We think not, because their case is fully provided for in the existing lunatic asylums of the country; in fact, if such persons were taken from the asylum and placed in the reformatory, there would be no great occasion for the former. Dr. Carpenter shows that a very large proportion, more than 25 per cent., of the inmates of lunatic asylums were drunkards, to say nothing of those whose lunacy is one of those "deteriorations" resulting from having had drunken ancestors. Mr. Haughton quotes from a cotemporary with reference to this—"Dr. Whitehead places intemperate habits first among the causes of insanity in this country, and observes in respect to them—Dr. Cox remarks 'that nothing is more common than to see the offspring of an intemperate man become demented.' Dr. Adams also expresses a similar opinion. I shall, therefore, says the author, offer only one remark on this subject, viz.:—'that women who are habitual drunkards, generally produce immature or idiot children.' Lord Shaftesbury says—'From my own experience as a Commissioner of Lunacy for the last 20 years, and as Chairman of the Commission during 16 years, fortified by inquiries in America, I find that fully six-tenths of all the cases of insanity to be found in these realms, and in America, arise from no other cause than habits of intemperance.' Dr. Corsellis says—'One-third of the cases in the Wakefield Lunatic Asylum may be referred to intemperance.' Dr. Whitehead says—'In an asylum at Liverpool 257 out of 495 patients became insane through intemperance.'"

Now if we remove from the case those classes already described, we yet have others so numerous as to require interference. The confirmed drunkard should be committed, whether he have the power of self-restraint or not. If in the former predicament, he can undoubtedly mend; if in the latter, a great deal may be done for him which could not possibly be done were he at large.

Every one must admit that the subject of "Chronic Alcoholism" is a fair case for a reformatory. Mr. Haughton in the pamphlet already referred to, quotes the following:—"We have made, as it will be seen, two distinct classes of persons degenerated in consequence of alcoholic excesses. One class arrives at length, by a series of well marked nervous lesions, physical and intellectual, at general paralysis. The other, although profoundly affected as regards innervation, remains stationary at a point, leading a miserable existence, characterized physically by a special condition of cachexia and marasmus, morally by a manifestation of the worst tendencies

and of the lowest brutishness." Of the first of these classes (paralyzed drunkards) it may be said that they are comparatively harmless; but at what cost to themselves and to their families have they at last arrived at this melancholy state? The tendency of drinking to this end cannot be too generally known.

The late Dr. Todd, one of the first physiologists of his day, says, with reference to the causes of paralysis—"Whatever interferes materially with the conducting power of nerve fibre, or the generating power of nerve vesicles (gray matter), will constitute a paralysing lesion. Thus, in the first place, poisoning of the nervous matter will act in this way.[a] Professor Miller observes—"The brain, and the nervous system in general, we have seen to be the parts chiefly acted on in the physiological working of alcohol.[b] These cases are more fit for an hospital than for a reformatory, but not so with the second named class, those affected with the disease commonly known as "Chronic Alcoholism." Magnus Huss of Sweden, has lately written a treatise on this subject, but perhaps a more accessible volume is that on *Chronic Alcoholic Intoxication*, by Dr. Marcet, of London, 1860. He says—"The symptoms of the disease depend on a functional disturbance of the properties of the nervous system, which may last for weeks, months, or years, even after the habit of excessive drinking has been given up."[c] He then details the cases treated by him with oxide of zinc, and at the end gives a tabular statement of all particulars. These may be given shortly as follows:—of 48 cases treated, 24 were cured, 15 ceased attending, having been relieved or otherwise improved, seven attended only a few times (some once, some twice), one became an intern patient in the Westminster Hospital, and one is reported as *cured*, but continues drinking, and has applied again.

We affirm then, that cases such as these are fit subjects for committal to the proposed reformatory. That this "Chronic Alcoholism" is really a bodily disease, and so capable of medical treatment, we see from the fact that 24 out of the 48 cases were so cured of it. Further, 15 ceased attending, having improved or been relieved. Now if these had been in an institution from which they could not have escaped, they would, in all probability, have been added to the 24 cures. Seven attended only a few times; this only shows that treatment uncombined, with moral and physical restraint,

[a] Clinical Lectures. 2nd Edition. 1861. p. 609.
[b] Alcohol, its Place and Power, p. 74.
[c] P. 6. Op. Cit.

is hopeless; and the last item, one reported "cured, but continues drinking," takes in the whole principle of the proposed reformatory; for in such an institution he should not be discharged immediately on cure; he should undergo some probation, or get free only conditionally.

The last class of confirmed drunkards which we shall consider, are those afflicted with *dipsomania*, or, as it has been more properly termed, *oinomania*. These are persons who should be admitted to our present lunatic asylums, for the best of reasons, *because they are lunatics*. But even by many who deny their lunacy it will be admitted, that some restraint, in a reformatory for instance, is desirable, although there are those who deem even this suggestion an attempt to interfere with the liberty of the subject.

A few words will suffice to describe the oinomaniac:—He feels an irresistable propensity to swallow stimulating drink of any kind, whenever and wherever he can get it (we have known several instances where persons having access to drugs of which the conveying media were wine, brandy, or spirits, used every means to take the most nauseous drinks, simply for the stimulating properties of them); he dislikes society, and drinks, if possible, in secret; nor can it be said that he drinks for drinking's sake; it is to free himself from the fearful misery occasioned by the non-gratification of this impulse; he knows he does wrong, and bitterly regrets it, but has not the slightest control over the will; he is regardless of health, life, property, and every other consideration; will sacrifice the dearest interests of his best friends, and in some cases display a propensity to commit suicide or homicide. A more full description of this malady may be found in Dr. Carpenter's well-known book already referred to. He quotes at length from Dr. Hutcheson, of Glasgow, to show that it appears in *three* forms: the *acute*, arising in the course of certain diseases, and disappearing with their cure; the *periodic*, or *recurring paroxysmal form*, arising mainly from intemperance, sometimes from hereditary transmission, and occasionally from certain diseases—its principal feature being, that between the attacks the subject becomes quite well, and apparently cured; and, lastly, the most common or *chronic* form, wherein the whole life becomes one constant scene of miserable degradation. That a wretch of this kind is a lunatic we assert.

In the eye of the law a lunatic is one who knows not right from wrong, and who is therefore an irresponsible person. The main character of insanity, in a legal point of view, is the existence of

delusion,[a] and hence the law hesitates to recognise any insanity but that of the *intellectual* powers. "There may, however,[b] be no primary disorder of the intellectual faculties, and the insanity may essentially consist in a tendency to disordered emotion—as excitement, which affects the course of thought, and consequently of action, without disordering the reasoning processes in any other way than by supplying wrong materials for them. This is now termed 'MORAL INSANITY;' and in it the subject is moved by a powerful impulse, amounting to necessity, volition being at the same time in complete abeyance, and he perfectly aware that he both does wrong and is amenable to punishment." Another authority says[c]—"There is much latent, undetected, unrecognised insanity in real life, bringing with it a long train of deep and incurable miseries. It assumes many aspects; occasionally it exhibits itself in the form of intemperance, an uncontrollable propensity for stimulants, clearly having a mental origin, in extreme eccentricity, and in acts of a morbidly-impulsive character." Dr. Forbes Winslow thinks that Moral Insanity is mostly accompanied by disease of the intellect. Herein he is probably correct; and although the law may *hesitate* to admit such a disease to be insanity, it does not always so act; indeed our law-making should advance in this respect with the psychological science of the age.

At the Social Science Congress, held in Glasgow in September, 1860, Mr. A Kirkwood read a paper *On the Propriety of Placing Habitual Drunkards under Restraint, with a view to their Reformation.* The scheme he proposed was, that lunacy should be declared to include habitual drunkenness; that separate asylums for the reception of such persons should be licensed by the sheriff; that the sheriff should have the power to send drunkards to these asylums, either upon the application of relatives, or upon the certificate of two medical men; that the sheriff should have the power of detaining them six months, or as much longer, up to the period of two years, as might be necessary.

At the same Congress Dr. Peddie, of Edinburgh, read a paper recommending the treatment of dipsomania. "Sheriff Barclay (we quote from a newspaper report) agreed with Dr. Peddie that dipsomania is insanity, and gave several cases of it—as, for instance, a woman who was very clever at sewing, but had a drunken mania

[a] Taylor's Medical Jurisprudence, p. 772. 4th Edition.

[b] Carpenter's Principles of Human Physiology, p. 837. 4th Edition.

[c] Dr. Forbes Winslow's Lettsomian Lectures on Insanity. London, 1854. p. 38.

for breaking windows; another man he (the sheriff) had sent ten times to gaol for stealing spades, and was certainly the 'knave of spades;' another man stole six tubs—and this was certainly a 'tale of tubs.' He thought the plea of the liberty of the subject was a false and unsound argument against confining dipsomaniacs."

The Rev. Dr. Guthrie says,[a] "The law should regard every man or woman who can be proved, before a jury or any other proper authority, to be, by habit and repute, a drunkard, a lunatic, and deal with them accordingly. The prospect of a shaven head, a strait jacket (if needful), the high walls of an asylum, and the society of the insane, would strike men with salutary terror. Months of sobriety would, in many instances, so restore the brain and body to health, that the person would acquire the power of resisting temptation, and come out to drink no more; the slave would acquire freedom in the house of bondage."

Foremost, among the Scottish medical men who have written and lectured on this subject, stands Dr. Christison, of Edinburgh. His lecture on some of the medico-legal relations of the habit of intemperance, delivered in 1858, is well worthy of public attention—particularly as we are told that to the opinions advocated therein he still adheres. He says:—"There is, fortunately, no difficulty in pointing out the kind of restraint which is required. In Scotland medical men have already established a system of treatment which is applied to those who consent to submit to it, and which seems to answer every purpose well; so that all the legislation wanted, is to render compulsory, at the instance of the nearest relative, what is at present only voluntary. This system consists of seclusion in some country district, where intoxicating liquors cannot easily be had; and where, under charge of a man of education, liberty is no further restricted than that each inmate must be at home at meal times, and at a fixed hour for the night, and that he must submit to all measures necessary for preventing the surreptitious use of stimulating liquors."

At the Social Science Congress, held in Dublin in August, 1861, a paper on uncontrollable drunkenness was read by Dr. Mackesy, of Waterford. The argument pursued throughout is, that by a defect in our laws the confirmed drunkard is regarded as a sane person; whereas such is not the fact; and, because it is not the fact, that legislative enactments should be made to secure the restraint of such characters.

[a] The City, it Sins and Sorrows, p. 140.

From the preceding statements we conceive we have established the psychological fact, that *Moral* Insanity is quite as irresponsible as *Intellectual.* We see in the case of the oinomaniac the prominent features of lunacy. From the description of the disease already given, it will be remembered that the subject of it loses control over his conduct, and cannot hinder his doing what he knows to be wrong; that he is propelled by an irresistible impulse to gratify his propensity, and sometimes even to destroy his own life, or that of others; that he cares not for his family, his property, or any obstacle to the gratification of his one desire, but readily sacrifices all. Thus he answers the description of the lunatics who are confined, to prevent injury to life and property of themselves or others; and however responsible for the course of conduct which may have brought the disease on him, all responsibility must be certainly held to cease when under its influence. But if the malady has been induced by hereditary transmission, or caused by some other disease, it is manifest that he is not responsible, directly or indirectly. Thus, on children are visited the sins of their fathers. If, then, lunatics should be placed in asylums, which we all admit; or, which is equally to the purpose, if they should be placed under forced restraint, and if oinomaniacs be in truth lunatics, it follows that they also should be so treated.

We need not pause to consider the good results to all concerned—the wholesome terror likely to be struck into incipient drunkards; but we would earnestly urge that in no other way can a cure be effected. Dr. Hutcheson, of Glasgow, never heard of more than two permanent cures; and Professor Stokes, of our own city, stated in a lecture,[a] that he never knew of one.

The proposed committal, however, is not hopeless. A friend communicated to us the following case:—"A young man, well educated, became such an incorrigible drunkard that his health declined, and he was also mentally and morally unfit for any business or profession. His moral sense was so entirely extinguished that he immediately disposed of his clothes, newly bought, retaining only rags to cover his nakedness; and he would steal any article within his reach; being all the while entitled to a good property, which a kind guardian dared not surrender to his keeping. Emigration was tried, but in vain; for, after squandering a sum given him as a kind of venture, he was extricated from an American workhouse, which he had entered as a pauper. As he persisted in the

[a] At the Meath Hospital, in 1854.

same misconduct on his return to Europe, his guardian, seeing but one hope of saving him—that is to treat him as *non compos mentis*—stated the facts to a magistrate, with a view to his committal to a lunatic asylum. That gentleman said, 'I accept your evidence of the melancholy facts, and, considering this the worst form of mania, I sign the order of committal with a safe conscience.' The governor of a district asylum, fully aware of the facts of the case, admitted the patient. In a few months he was discharged in renovated health; and so salutary has been the effect of the conviction that there was a power to treat him in this way, that the young man has never disgraced himself since, in a period of three years." Our correspondent adds—"Names are withheld for obvious reasons; but I pledge myself to the truth of the foregoing statement."

Here we see committal and treatment cured the man; while the salutary terror of being so treated, should he again fall into the sad habit, powerfully deterred him from entering even, on what we may here term "the first avenues of ill."

But institutions, in some respects resembling those now proposed, already exist. In Scotland they may be found—for instance, in Skye. Dr. Christison gives an account of his visit to an asylum for inebriates in that island. Here, we are told, the same failing existed, and few permanent recoveries were made, from the want of controlling power over the inmates, who soon tired of their discipline and went away; indeed they became patients, in the first place, only at the request of their friends, so that nothing better as a result could have been expected.

In the United States of America reformatories, or asylums for drunkards, are rapidly becoming national institutions; but, being only voluntary, they sadly want the principle of legal restraint. In one, called the New York State Inebriate Asylum, *The London Weekly Record of the Temperance Movement*[a] tells us, that *three thousand* inebriates have applied for admission; and among the number are said to be 30 clergymen. In the *Journal of the American Temperance Union*[b] we find a detailed account of this same institution. The following is an extract from the report:—"Up to the present date[c] 3,132 applications have been made to enter the asylum, many of which are from the patients themselves. These applications have come from every state in the Union, and from the Canadas. Of the number who have applied for admission during the past

[a] No. 204, p. 98. [b] No. 3, March, 1860. [c] February 6, 1860.

year, nine have committed suicide while labouring under mania *a potu.*"

In Holland, confirmed drunkards are put under legal restraint; and if, after fair trial, they prove irreclaimable, they are confined for life, and are considered dead in law. Dr. Mackesy, in his paper already referred to, concluded with propositions embodying his views as to the mode of instituting and conducting these establishments. We commend them to every one who would consider the subject fairly; but we would especially note propositions 9 and 10. Proposition 9 is as follows:—"When a patient shall be sent to one of these establishments *without his consent*, there should be a certificate from two medical men, with a declaration of the nearest relative, stating the history of the case, which should be submitted to the magistrates at Petty Sessions, who should be empowered to inquire into the circumstances privately, if the majority deem it expedient, and the patient can only be admitted on the order of the magistrates in Petty Sessions assembled, unless in cases of great urgency and violence, when a case may be admitted on the order of one magistrate, provided the violence and urgency of the case is medically certified; but such cases should be returned to the next Petty Sessions of the district, when the committal must be confirmed, and a Petty Session order obtained." This is fair to the patient, fair to the family, and fair to the magistrate, who might incur a heavy responsibility by making an unjustifiable committal.

Proposition 10 is that "in all such cases there should be an appeal to the assistant barrister at Quarter Sessions. This should be allowed in all cases of lunacy and dipsomania, to save the enormous expense of litigation that frequently occurs."

Dr. Guthrie suggests committal by verdict of a jury. Now, provided that the equitable Scottish system of *a majority* of jurors be adopted, and that one of three verdicts be given, no person could reasonably object to such a course; for it may justly be objected to that relic of barbarism, trial by unanimous jury, that this is such a question as a number of men could not at all times be expected to be unanimous about; and where a unanimous verdict happened to be given, the less decided in opinion might sometimes be presumed to have given way to the judgment of the rest. Moreover, an innocent person could be acquitted without stain on his character; whereas the cautious "not proven" would prevent him who escaped, through lack of evidence, from being confounded with the "not

guilty" person, as in England and Ireland, but might possibly induce him, if at all responsible, to consider his ways and be wise.[a]

It has been objected to legislating in any way for the restraint of confirmed drunkards—*that law would prove insufficient to determine a standard of what is drunken insanity.* This is only using the invalid argument "a particulari ad universale;" for even though occasional error may occur in fixing the standard, yet, as the power of appeal would always exist, no great or permanent grievance could be complained of; besides, any argument of this kind applies equally to all committal for lunacy; and no person will contend that because there have been, and may be, errors of judgment among magistrates, physicians, and others, or even gross abuses of the power lodged in these parties, therefore the doors of all lunatic asylums should be thrown open, and all the mad men and women let go free about the country.

It has also been objected *that such a law would press unequally*, that the poor man would suffer, while the rich drunkard who might debase himself at home, would practically be exempt. This we deny; indeed the unequal pressure, if any, would be the other way, for the rich man could do more mischief to his family and his property than the poor man; and this objection also applies to laws against vices of every kind.

It is said *that it would violate the just rights of man.* A man may perform an act in private which is a sin, but the same act in public becomes a crime. Formerly every village had its resident idiot or madman, who was hunted into frenzy by the inhabitants, and exposed by his relatives to make money by his misery; formerly a woman could expose her child in small-pox, to gain the alms of passers by; now neither of these exhibitions is permitted, and though the prevention of them was doubtless an infringement of that grand liberty of the subject, the right to do as he pleases, yet we all acknowledge its justice, yea, we *demand* that it should be so.

Further, it has been objected *that it would cause more misery than it would put down.* Some may perhaps feel it a disgrace to have

[a] In the army confirmed drunkards might be advantageously treated as diseased persons. If the drunken soldier, instead of being repeatedly punished, and his many repetitions of intoxication inserted in the Defaulter's Book, to be finally made the basis for a trial by Court Martial—if, instead of being so treated, he was sent into hospital, the best results would follow. At first the hospital might be filled, and the cells more empty than usual, but ultimately the occasion for both would materially diminish.

their relatives thus dealt with; but no sympathy can be extended towards such as deem the disgraceful term "drunkard" an epithet for pardonable or charitable construction. The injury likely to arise from unjust committal has already been provided against, and as to depriving an artizan's family of the means of living, by imprisoning the artizan himself, we would ask, what means does he provide them with while drinking?

It has been alleged that such an institution as that proposed *is illegal in principle*, as drunkenness is not a crime unless it disturbs the public peace; and further, that it should not be a crime any more than gluttony, which is equally condemned by the law of God. To this we reply, that if it be not a crime by law it ought to be made one as soon as possible, and that for the very reason why gluttony should *not*, because of the miserable consequences to morals and society entailed by the one, as distinguished from the other, which, although a sin, yet, even in this life, brings a chain of fierce diseases as the fair and legitimate consequence of such rebellion against the constitution and course of nature.

Moreover, it has been objected that the whole scheme is *impracticable from the want of evidence*, that relatives or acquaintances would scarcely ever inform against the delinquent or lunatic. This is an untenable objection, for the same applies to ordinary lunatics, and we know that it is highly practicable (and practised too) in such cases. Lastly, it has been objected that it would be *almost impossible to find when the patient was cured.* Without any experience of the good results of such reformatories, we may admit this in part; but one direct result of their establishment would be, increased knowledge of the disease and its cure, derived from observation and experience; besides, the adoption of the ticket of leave system would not fail to keep up a salutary, moral, and physical discipline on those who might be discharged on probation.

As we have before remarked, the mode of treatment to be pursued in these reformatories should combine the excellencies of various agencies already at work, ministration to the mind diseased, to the body diseased, and to the sinful and reprobate soul, as well as all preventive and recreative measures to save them from that great evil—being led into temptation. The description of these means might fill a large volume; any one of them, particularly the medical part, would form a professional treatise of considerable importance.

And here might we say a word to those who wholly repudiate

our position of drunken insanity, who assert that drunkenness is a crime, not a disease, and not to be classed with insanity or epilepsy, Be it so; but are not these very diseases some of the results of drinking? do we not every day see that the sins of fathers are, in this life, visited on their children? that men have become mad (using the term in its popular sense) by the thousand, from this very cause? and shall we not believe that drunkards who, with their eyes open, deliberately continue in the besetting sin, nay, ultimately deprive themselves of the power of reformation, are irresponsible when morally insane, but undoubtedly responsible for becoming so?

Dr. Mackesy suggests that these reformatories be made self-supporting, so as to avoid their being an expense to the nation. We object to this, because then only those who could pay would derive any benefit from them; the large class that could not, and that which would not, would thus be practically excluded. They should be supported by the nation, and should be for all. Even were it a question of expense, that is easily answered. We read in Dr. Guthrie's work, *The City, its Sins and Sorrows*, that drunkenness is the cause of most crimes;[a] that it causes the annual loss of 60,000 lives in our population; and that £60,000,000 are spent annually in the United Kingdom on intoxicating liquors. Dr. Carpenter shows drunkenness to be the cause of many diseases.

Now, if most crimes be got rid of, much legal expense is thereby saved to the nation. If 60,000 lives be annually lost, the national wealth suffers. If many millions annually be spent on drink, how much of that could be saved by seriously diminishing this source of expenditure. If many diseases be produced by it, what a saving would its diminution be to families and Poor Law Unions; and if its widest and most general result, poverty, be diminished, what a national saving in poor rates to us all.

Our able statesman, Lord Palmerston, has urged on the working classes the education of their children, and the keeping of social homes, as powerful antidotes to the public-house and the prison; this is well, and saves the public much expense in the long run; but how much greater would be the expense saved to the country by the establishment of reformatories for drunkards, is evident from the data to which we have already referred.

When we express our view, that Total Abstinence Societies are not well calculated to overcome this great evil, we do not mean to discourage these useful institutions; by no means; we only say that

[a] P. 124.

they are not capable of *general* adaptation. We have known able clergymen who never advocated the extreme views that alcohol in any degree is poisonous, that any partaking of it is sinful, and the like, yet become, Total Abstainers, because, when they urged the giving up of the sin on a poor man, they were immediately met by the reply—"It is all very well for you who have plenty, and can drink your wine quietly at home; why do *you* not give it up?" Thus they have given up the use of alcohol (which, so far from being at all times poisonous, is, in certain states of the system, FOOD, and the only FOOD capable of assimilation),[a] on the principle of St. Paul, who would neither eat meat nor drink wine while the world lasted if it made his weak brother to offend. Reformatories for young criminals are the heralds of a change in our criminal jurisprudence from the old system of an eye for an eye, to the christian one of love to our neighbour. Let us hope that reformatories for drunkards will inaugurate a new era in our national law-giving, and so keep pace with the rapid progress of Psychological Science.

Placenta Previa; its History and Treatment. By WILLIAM READ, M.D., &c., &c. Philadelphia: J. B. Lippincott and Co. 1861. 8vo, pp. 340.

THIS publication appears as the twenty-third volume of the Library of Practical Medicine, in connexion with the Massachusetts Medical Society—one, apparently, of a series of such works produced for the use of the fellows of that body.

The great characteristic of the medical literature of former days was originality; we now live in the age of compilations. Absolute nescience concerning the pathology and treatment of any important ill "our flesh is heir to," so far from being an impediment to the indoctrination of others on the same topic, is, it now appears, a condition qualifying one for that purpose.

During an extensive course of study, necessary to remove his own ignorance, the diligent student—in these scribbling times—excerpts copious extracts, and furnishes them, second-hand, to his brethren.

[a] See Dr. Henry Kennedy's paper, The Influence of Food on the Intellect, read before the Social Science Congress, 1861; also Dr. Todd's 16th Clinical Lecture, 1861.

It is presumed to be incumbent upon every member of our profession, now, to write; indeed it is considered necessary that the professional career should be inaugurated by authorship; consequently, having no resources of his own from which to draw, the neophyte is compelled to encroach upon the accumulations of others.

The receipt for the production of a book is very simple—requiring, indeed, some labour, but merely of a mechanical nature. It is as follows:—Having chosen a subject upon which to write, you read and copy the opinions of as many authors as can be procured who have already published on the same subject. These extracts are then to be arranged in chronological order, and the bias of your own mind upon the collection is subsequently to be set down. All then required is your own name to the title-page, and the work is accomplished.

It is comforting to find that *we* are not singular in the exercise of this fashion of publication. The present volume fully attests that America is not free from the prevailing habit of our islands.

We are not acquainted with the professional standing of the author, or whether he be qualified to be considered as an authority upon the subject on which he treats; but that the book has been "got up" in the manner we have described above, one example will suffice to show; and the chapter we allude to may be taken as a fair sample of every one in the volume.

The introductory chapter commences with the following axiom:—"Among all the causes which make labour difficult and dangerous, none are so much dreaded as placenta previa." This must be demonstrated satisfactorily, for the information of the medical gentlemen who compose the body of fellows of the Massachusetts Medical Society. The author accordingly proceeds thus with his task:—"There are none more perilous," says Lamotte, "than that in which the after-birth presents itself before the child." "Hemorrhage," says Deleurye, "is a fearful occurrence to a woman in labour"—"Conquest says"—"Maunsell remarks"—"Denman considers"—"The elder Rigby opens his admirable essays by stating"—"Dr. Collins says"—"Dr. Jn. Ramsbotham says"—"Duncan Stewart says"—"Mr. J. T. Ingleby remarks"—"Madame La Chapelle remarks"—"Dr. Ed. Rigby says"—"Mr. Burns remarks"—"Dr. James Hamilton says"—"Dr. F. H. Ramsbotham states"—"Cazeau remarks"—"Dr. F. Churchill remarks"—"As Nægelè has observed"—and as Professor Meigs "has spoken," so say, remark, and speak all: viz.—unavoidable hemorrhage *is* a dangerous

complication in labour; and so, we are sure, the gentlemen of the Massachusetts Medical Society may rest satisfied that such is the fact. But as *we* are already aware that all our midwifery class-books have told us this tale, and as our experience as practitioners has taught us more forcibly the fact, the only new matter we can glean from Dr. Read's introductory chapter is, that he, in the absence of practical experience, and from defect of early education, required to consult every authority before he could be thoroughly convinced of it himself—a consolatory reflection for his patients.

Upon looking at the heading of the next chapters, however, we expected to discover some interesting novelty. The question—"How is placenta previa produced?" would form a fine subject for an original essay, and is one which would require a very great amount of medico-physiological learning and research. Yet here our author by no means quotes many authorities; but, after about a page has been devoted to its consideration, dismisses the subject very simply, very sensibly, but by no means originally, as follows:—

"If we admit the theory that the ovum may be impregnated by the male fluid as well *after* it has left the ovary as while retained within the unruptured (*sic*) vesicle, the difficulty of accounting for placenta previa is, to a great extent, removed. For the vivifying influence of the semen may not have been communicated to it until just at the time the ovum was leaving the cavity of the uterus, at the os uteri itself, where, in consequence of this impulse, it attaches itself, and, as the pregnancy goes on, developes the phenomena of placenta previa."

This chapter headed "How produced," then suddenly branches out into a statistical account of the frequency of the complication; and we are given all the cases recorded by obstetric statistical authors (with one exception, to which we shall presently draw attention), "Dr. *M'Clintoc*" (*sic*) included. These amount to the number of 1,276 out of 1,542,772 deliveries, or once in every 1,200 deliveries. The concluding paragraph is concerning the diagnosis of placenta previa. This important consideration is most curtly alluded to, thus:—

"*Diagnosis.*—The period of pregnancy at which those symptoms occur which lead us to anticipate placenta previa is very uncertain. They may manifest themselves at any time after the third (*sic*) month; but, as a general rule, are more frequent during the sixth, seventh, and eighth, than at an earlier period. When, therefore, attacks of hemorrhage come on in the latter months of pregnancy, without apparent cause, no time

should be lost in ascertaining if this complication is present. Dr. Robert Collins remarks—'Whenever hemorrhage is met with, to any extent, in the last three months of pregnancy, it is impossible to be too watchful of our patient; as we know not the moment it may become so profuse as greatly to endanger life.' In this opinion," says the author, "all obstetric writers agree; and the importance of an early examination cannot be over-estimated nor too strongly urged."

And this is the amount of Dr. Read's lore upon *the diagnosis* of placenta previa! That is, when hemorrhage occurs towards the terminal months of gestation, especially, no time should be lost in ascertaining if the flooding be the result of placenta previa! Not one word as to the manner of arriving at a correct conclusion, further than, that an examination should be made! Surely, when our author took such pains to inform us that placenta previa was a dangerous complication, we were justified in expecting he would have given a little more information on its diagnosis than he has done. On this point, of all others in connexion with his subject, the author would have had an opportunity of displaying *practical* knowledge.

With respect to the physiology of the utero-placental circulation, Dr. Read favours us with no less than 38 pages of quotations from Hunter down to the authors of the present period. The special causes of the hemorrhage in cases of placenta previa occupies 34 pages of matter similarly compiled—the remainder of the volume being consumed in the consideration of the treatment of this unfortunate condition.

And now the statistics commence with a vengeance. To arrive at a correct view of the treatment of placenta previa our author proceeds, according to the advice of the Apostle Paul, which he very properly states, "applies as well to medicine as theology," viz., "Prove all things, hold fast to that which is good;" and in following out this inspired teaching, Dr. Read collects all the cases of placenta previa he can find the history of on record, and arranges them into stupendous tables—exhibiting a vast amount of labour and patience—showing their termination and treatment under various circumstances.

The first table contains the facts connected with 52 cases where the placenta was expelled and the child born, by the unaided efforts of nature.

The second table gives a report of 26 cases of "spontaneous separation of the placenta with artificial delivery of the child"—viz.,

those in which uterine action was sufficiently powerful to throw off the placenta, but failed in delivering the child.

Table the third gives 31 instances in which the separation of the placenta was artificial, and the delivery of the child natural.

The fourth table includes those cases in which both the placenta and the child were artificially delivered—consisting of 51 examples.

"These four tables comprise all the instances in which the placenta was completely detached from the uterus before the birth of the child."

The fifth table displays 123 cases in which the placenta was partially detached, and the child was subsequently delivered without assistance. In other words, when a portion of the placenta was detached to an extent sufficient to admit of the child's delivery.

Table the sixth contains the treatment of 557 cases in which a portion of the placenta was detached, and the child delivered artificially.

Table the seventh gives those cases in which the placenta was perforated, and the child variously delivered.

And table the eighth exhibits those in which the mother died undelivered.

These elaborate tables are drawn up with a view to the determination of the relative value of the different methods of treatment, They are formed upon the following principle in the first four, viz.:—The number—by whom reported—age of women—number of pregnancy—duration of pregnancy—condition at delivery—state of os uteri—presentation of placenta, *i. e.*, whether partial or complete—presentation of child—amount and description of hemorrhage before interference with placenta, when the placenta was separated for example—hemorrhage after that interference—hemorrhage from first interference to time of delivery—the mode of delivery, and result to mother and child. The other four tables are somewhat similarly arranged. When it is considered that our author has thus tabulated so many as 891 cases in these eight tables, some estimate may be made of the amount of labour his task must have demanded; and an idea may be formed, at the same time, of the trouble necessary for its perusal. It is to be regretted that partial and complete placenta previa have been indiscriminately combined in all the tables. Our space will not admit of any lengthened analysis of these statistics, so we shall content ourselves by giving the general summary of our author upon them. He says, from the fact that 670, or more than two-thirds of the entire number, come under the denomination of partial placenta previa,

"That the method proposed by Professor Simpson will be available in only a small fraction of cases; and that the old practice of turning, and delivering by the feet, without disturbing the connexions of the placenta any more than is necessary for the purpose, must, after all, be our main resort, and the method which, in the mass of cases coming under charge, will most likely be required."

From the data of his tables our author arrives at the following conclusions:—

"1st. The danger to the mother in placenta previa increases as the period at which labour comes on approaches full time; a result rather to be expected from the increased capacity of the uterine vessels as pregnancy advanced to its termination. It is, therefore, better to terminate the labour after it has really begun, than to endeavour to conduct the labour to full time.

"2nd. The danger to the mother is less when the os uteri is completely covered, than when a portion only is involved in the placental attachment; and least of all when the attachment becomes nearly or quite central with reference to the os, if the contractions are vigorous enough, that the placenta will be thrown off and expelled into the vagina, and the hemorrhage be checked.

"3rd. The condition of the mother is a much more important element in making a prognosis of the case than the amount of blood lost. . . . The condition of the mother, then, should be most carefully watched, and the appearance of any symptoms indicating debility, or a tendency to collapse, should be the signal for the adoption of such remedies or such a course as will the most speedily and safely insure the delivery of the child. And they should be put into effect without any delay, always bearing in mind the fact that operations which are perfectly safe to the mother, when her vital power is comparatively undiminished and unimpaired, become almost certainly fatal if performed when she has become exhausted by hemorrhage and suffering.

"In those cases where the pains are vigorous, and show a disposition to be permanent (the head presenting, the os in good condition, and the strength not materially impaired), rupturing the membranes, by letting off the waters, and bringing the child's head down upon the os, will, in most instances, be enough to check the bleeding, and place the mother in a safe condition. When, however, a want of tonic power is manifested, or it is probable that resort must be had to forced delivery, the discharge of the waters in this way will only increase the difficulty of the operation and the danger to the mother.

"5th. The danger to the mother is materially increased by artificial delivery. But the same statistics which show this result also make it

evident that this increased fatality is owing, *not so much to the operation itself*, as to the enfeebled and exhausted condition of the mother at the time; and that, with a favourable condition on the part of the mother, there is no more danger in resorting to it in placenta previa than in ordinary cases of difficult labour.

"6th. The effect of artificial delivery to endanger the life of the mother in placenta previa being, therefore, almost directly proportionate to the degree of exhaustion under which she labours, it should be the aim of the practitioner to perform this operation before such a state is reached.

"7th. If, from the progress of the case or the conditions of the labour, a resort to artificial delivery must finally be had, it should not be delayed an instant beyond the time when the dilatation or dilatibility of the os uteri permits the introduction of the hand into the uterus—the danger to the mother from forced delivery being directly proportionate to the degree of exhaustion under which she labours.

"8th. When, from the rapidly-failing condition of the mother, or the presence of any cause rendering artificial delivery impossible, a resort to the foregoing is forbidden, the placenta should be wholly separated from the uterus, and such remedies made use of as will recruit the strength of the mother, until reaction having been established, she can be delivered in whatever way may be deemed best.

"9th. The tampon may be used advantageously in all those cases where, with an amount of flooding sufficient to materially affect the constitution of the mother, the os uteri remains *so rigid* (*sic*) that it is impossible to perform artificial delivery. But while, under these circumstances, it is important to gain time for the dilatation of the os, and, at the same time, prevent hemorrhage from too speedily exhausting the mother; under an opposite state of things a resort to the tampon, by inducing this temporising policy, will often cause a loss of valuable time, and in this way make just the difference between a safe and a fatal issue. As the effect of this application is not only to check the hemorrhage, but also to excite labour pains and dilate the os uteri, it is totally forbidden in all cases where either, or both, of these results may not be desired.

"10th. The effect of ergot being of a two-fold nature, according to the condition of the system (ecbolic or parturient where the nervous energy is undiminished, and stimulant when there is a want of this), it should not be administered when there is a probable necessity of terminating the labour by an operation, unless at such an interval that the effect of it is either exhausted, or will not come on until after the operation is finished, or the condition of the mother is such that it will act merely as a stimulant.

"11th. In cases when the exhaustion is excessive, and version is the only alternative, after the feet have been brought down, the body of the child should be left undelivered until the uterus has been roused to con-

tract, and a firm condensation of its walls has been secured; at least it should be withdrawn so steadily as to prevent the evil consequences which sometimes follow too sudden delivery."

We have quoted these conclusions of our author *in extenso*, inasmuch as they are the absolute results of his laborious compilations. It is for our readers to determine, whether they have received any new light on the subject of the treatment of unavoidable hemorrhage!

It is not our intention to make any lengthened observations upon these, our author's, conclusions; but we cannot close our notice without alluding to the circumstance of his having omitted to mention the most recent statistics on placenta previa published in this country. Dr. Collins, and Drs. Hardy and M'Clintock's Reports of the Dublin Lying-in Hospital only have been produced. Drs. Sinclair's and Johnston's publication was, we presume, not within his reach, or he would have brought their statistics forward also. We strongly recommend the latter publication to the author's attention. In it he will see the treatment of placenta previa briefly but fully set down; and the result of that treatment also exhibited, proving its soundness and showing, that in the Irish school of midwifery there exists no doubt relative to the mode of procedure to be adopted, under every variety of this complication.

Etudes sur le Cathétérisme Curviligne et sur l'emploi d'une Nouvelle Sonde, dans le Cathétérisme Evacuatif. Par Le Docteur J. A. Gely. Avec 101 figures. Paris: Germer Baillière, 1861. 4to, pp. 172.

Studies on Curvilinear Catheterism, and on a New Sound in Evacuative Catheterism. By Dr. J. A. Gely. With 101 figures. Paris: Germer Baillière, 1861. 4to, pp. 172.

This rather voluminous work pretends to teach us that our previous notions on introducing instruments through the male urethra into the bladder are erroneous, and not in accordance with anatomy or pathology. After a very long preamble, the author comes to the point in the last few pages; he finds that the curve of the urethra is not regular, but is composed of two curves, which are arcs of different circles; the posterior, which includes the mem-

branous and bulbous portions, is fixed; whereas the anterior is flexible, not fixed, and hence its curve is liable to alteration. It is the curve of this posterior portion that we are to take into consideration in giving the requisite bend to the catheter, previous to its introduction; the anterior portion of the canal, for the reasons stated, readily adapts itself to instruments of different shape and measurement. The curve of this posterior portion, the author states, corresponds to an arc formed by the sixth part of the circumference of a circle of ten centimetres diameter (3·9 inches); and great stress is laid on passing an instrument, which will not give to any portion of the canal a direction or curve not natural to the part. According to Dr. Gely's statement, this is done in using the ordinary instruments, which are bent to correspond to the curve of the anterior portion of the canal; this curve is greater than that of the posterior, so that we have the urethra stretched on an instrument of greater curve than that of the part itself. If such an instrument be used, the surgeon will experience difficulty and the patient inconvenience, owing to the straightening of the curved canal, and also from the point of the catheter impinging on the walls of the urethra; whereas, it should, if properly curved, pass directly in the centre of the passage.

This difficulty is more imaginary than real, as every practical surgeon, who is in the habit of passing the catheter, knows that no matter what the curve of the instrument may be, he can manage to pass it by adopting the usual manœuvres. Of course we are now considering the healthy, and not a diseased urethra. Notwithstanding, though the author has discovered this happily constructed instrument, which is to fulfil all these requirements, and to fall into the bladder merely by its own weight, he yet gives directions as to depressing the handle of the instrument, and several other expedients put in practice by every surgeon, *when requisite*, in using the old-fashioned instruments, which have served us so long and so well. This is a tacit acknowledgment, that these newly described instruments sometimes prove as difficult of management, perhaps, as often so, as their predecessors.

It is ridiculous to suppose that the same curve will suit all cases, or any particular class of cases. Every day we have opportunities of seeing that nature is capricious; there is no such thing as symmetry in nature; no two individuals are formed exactly alike; no two surgeons in Dublin would set about passing a catheter in identically the same manner, and yet they will all succeed;

probably the same surgeon may have occasion to alter the curve of the instrument twice or thrice before he accomplishes introducing it into the bladder.

The curve of the newly described catheter is intended to correspond to the curve of the posterior portion of the urethra. Dr. G. divides his individuals into four classes, according to their height, and development of the organs of generation.

The following are his measurements:—

No. 1 for persons of low stature; the curve of the instrument should represent the third of the circumference of a circle of ten centimetres diameter (*i.e* 3·9 inches).

No. 2 for persons of somewhat larger size; the curve of the instrument should represent the third of the circumference of a circle of eleven centimetres diameter (4·3 inches).

No. 3 the most usual size, for individuals of middle stature; the curve should be the third of a circle of twelve centimetres diameter (4·7 inches).

No. 4 for persons of large stature; the curve should be the third of a circle of thirteen centimetres diameter (5·1 inches).

Nos. 1, 3, 4, are the sizes in most request; No. 2 is not required as No. 3 will do in that class; and instead of No. 1, the author proposes to use No. 3, depriving it of one-tenth of its curve, so that the instrument required for No. 1 class, should represent nine-tenths of the third of the circumference of a circle of twelve centimetres diameter.

The practical inconvenience of such a method is, that a surgeon setting about the treatment of a case where the urethra is diseased, should be provided with a set of instruments of each class, so that he would require exactly four times the number of instruments that at present we deem sufficient.

The work exhibits much labour; it is well put together, and gives a complete history of "Cathétérisme" from the earliest period of the straight catheter; it must be considered as a useful addition to our knowledge of the surgery of the urethra. The author has made a very extended series of investigations as to the true shape and course of the urethra, and gives figures taken from the very numerous dissections he has made for this purpose. The method he pursued is an ingenious one, but perhaps not the best suited to ascertain the true position of the parts. He made a section of the pelvis in the median line, and then took a cast, in plaster of Paris, of the cut surface; and from this he prepared his diagram. We

incline to think that if he had first hardened the parts in spirit—after the method adopted by the late Mr. Houston, in making the beautiful preparations in the Museum of the College of Surgeons—the results would have been more worthy of reliance. Notwithstanding this, we think these figures demand the careful study of all practical surgeons.

On the Parasitic Affections of the Skin By T. M'Call Anderson, M.D., &c. London: Churchill. 1861. 8vo, pp. 152.

The substance of this volume, which appeared from time to time in the pages of the *Medical Times and Gazette*, having been thoroughly revised and corrected, is now, with the addition of wood-cuts, placed before the profession.

Dr. Anderson, in his introduction, adverts very judiciously to the prevailing neglect of the study of skin diseases; and after an allusion to irrelevant matter, passes on to the classification of the parasitic affections of the skin, which he conveniently divides into two heads.

1st. Cutaneous affections due to the presence of a *vegetable* parasite. 2nd. Cutaneous affections due to the presence of an *animal* parasite.

Under the vegetable parasitic class he places favus, tinea tonsurans, alopecia areata, and pityriasis versicolor, believing each of these four divisions to be due to the presence of a distinct parasite.

Favus, Dr. Anderson believes due to the presence of the Achorion Schönleini, and under this genus he includes the species—Scald-head, honeycomb ringworm, Porrigo favosa, Porrigo Lupinosa, Tinea vera, Porrigo-phyte, Erbgrind, Teigne faveuse (Alibert). He regards Favus as affording an example of a highly successful mode of treatment, founded upon a correct knowledge of the nature of the affections; more particularly as demonstrated by the microscope. The remainder of the second, and the whole of the third chapter he devotes to the symptoms and microscopical appearances of the diseased structures; after describing the modes of extracting the hair, as recommended by Bazin, and others, he goes on to mention some of the parasiticide applications he has found most efficacious, of which he gives bichloride of mercury the preference, two grains of the bichloride to an ounce of water being sufficiently strong.

Among the other remedies, he refers to sulphur, turbith mineral, and oil of cade; and he goes on to say—

"It will be seen that the local is the only treatment capable of effectually curing favus; but, at the same time, in this, as in all local diseases, the general health must be attended to, and any deviation from a natural state corrected when possible."

Again—

"In the epidermic variety depilation is not so necessary, the application of a parasiticide lotion, as a solution of the bichloride of mercury, being usually sufficient to remove it. When the disease attacks the nails, the treatment is also simple. It is necessary to destroy gradually, by means of a small file, the portions of nail covering the favus matter, and after arriving at it, the application of a parasiticide is quite sufficient to destroy the fungous growth.

In chapter V., Dr. Anderson treats of tinea tonsurans (due to the presence of the tricophyton), adducing proofs that Herpes circinatus, Herpes tonsurans, and Sycosis are merely varieties of the same disease; he then goes on to the symptoms, diagnosis, and prognosis of Herpes circinatus, sycosis, and Herpes tonsurans; and, in chapter VII., he details the causes and treatment of these three varieties of tinea tonsurans.

Chapter VIII. is occupied with the symptoms, causes, diagnosis, and treatment of the alopecia areata, a disease due to the presence of the microsporon Audouini; an excellent woodcut of the hair from a case of this disease, containing spores and tubes of the parasite, being subjoined.

Of the disease due to the presence of the microsporon furfur, he adduces the pityriasis versicolor; and, in describing its symptoms, causes, and proofs of its contagious nature, he remarks as follow:—

"Now, I quite admit, that no one case taken separately is sufficient evidence of the disease being contagious, but taken in the aggregate, I think they form positive proof of the contagious nature of the disease. It is, however, equally certain, that it is not so contagious as some of the other parasitic affections, else we would not meet with so many instances of husbands affected with the disease who have not communicated it to their wives, and *vice versa*. This leads me to state my belief that it is necessary to the development of the parasite, that the constitution of the person attacked, be favourable to its growth. I believe that the reason this disease is more feebly contagious than other parasitic affections, is—

that fewer persons supply a soil favourable to the germination of the parasite."

Chapter X. is taken up with considerations of phthiriasis and its species, pediculus corporis, pediculus capitis, and pediculus pubis, all due to the presence of pediculi.

In chapters XI., XII., and XIII., he treats of that too familiar affection, scabies; and after describing the history of the discovery of the insect (acarus scabiei), its habits and appearance, he describes the symptoms and microscopic appearance of the crusts of the so-called scabies Norvegica; and under the heading of treatment, he details the constituents and mode of application of the pomade of Helmerich, the lotion of Vleminckz of Belgium, and Hebra's modification of Wilkinson's unguent, concluding with the precaution—

"That it is necessary, whatever preparation you employ, that it be rubbed into the skin of the *whole body*, with the exception of the head, which is not usually attacked; for if one impregnated acarus is left unscathed, the disease will soon be as bad as ever."

We have read this little volume with much pleasure. That it contains some statements which further investigation only can confirm, is very wisely anticipated by the author in his preface; but, on the whole, it savours of a desire to found the pathology and treatment of cutaneous diseases on a true base, and thus contrasts very favourably with many books which have issued from the press of late years, on the same subject. The work is illustrated with 21 woodcuts, which, on the whole, are neatly executed.

I. *A Manual of Chemistry, Descriptive and Theoretical.* By WILLIAM ODLING, M.B., F.R.S., &c., &c., &c. Part I. 8vo, pp. 380. London: Longman and Co. 1861.

II. *An Introduction to Practical Chemistry, including Analysis.* By JOHN E. BOWMAN, F.C.S., &c., &c. Edited by CHARLES L. BLOXAM, Professor of Practical Chemistry in King's College, London. Fourth Edition. 12mo, pp. 311. London: John Churchill. 1861.

THESE two works are both intended for the use of students; the first, which is incomplete, "was undertaken more especially at the

request of Professor Brodie, who wished to have for the use of his class at Oxford, a chemical text-book, arranged in accordance with his own method of teaching;" it represents the advanced school of chemists, not only of Oxford, but of Europe, and may be regarded as a class book of Young-Chemistry; the other book is of humbler pretension, and in its present fourth edition, as in its first, aims at leading the student, by the beaten paths of recognised methods, to a knowledge of recognised truths of chemical science; or, as Young-Chemistry would say, if she knew Latin, "non quo eundem est, sed quo itur."

Mr. Odling's work possesses a value for the accomplished chemist, who may wish to become acquainted with the nomenclature of Laurent and Gerhardt, but will be found very confusing to the student, who will discover, after he has mastered it, that he is unable to understand the language of other chemists.

In 1860, a congress of chemists met at Carlsruhe, to settle the controversy that exists as to chemical nomenclature, but separated without arriving at any conclusion; partly on account of the confusion of tongues, nearly as great as that of *Babel*, and partly on account of the obstinacy of the older chemists. The new nomenclature, which Mr. Odling adopts, possesses, unquestionably, some advantages, but it requires such a thorough remodelling of almost universal forms of language, that many chemists think it will never be universally adopted.

There are, really, two questions involved; one, that of the use of unitary formulæ; and the other, that of the change of the atomic weights of a large number of the elements. The first of these questions has been discussed for a long time, and the use of unitary formulæ will ultimately prevail, but the progress of the reform has, we think, been retarded by its being mixed up with the second question, which involves practical difficulties of the gravest kind.

Let us illustrate, by an example, the change required by the use of unitary formulæ: according to common ideas, sulphuric acid is a sulphate of water, and is expressed as such by HO,SO_3, and sulphate of potash is expressed by KO,SO_3.

According to the unitary notation, sulphuric acid is considered as sulphate of hydrogen, and sulphate of potash as sulphate of potassium; and both are expressed as H,SO_4, and K,SO_4. The theoretical difference in the two points of view is considerable, but the change of notation is slight.

In like manner, nitric acid and nitrate of potash, would be written

by the common method, HO,NO_5 and KO,NO_5; and by the unitary method H,NO_6 and K,NO_6.

If this were the only question involved, Young-Chemistry would carry the day, as the theoretical advantage and clearness of the unitary notation are very great; but, unfortunately, the other question of change of atomic weight intervenes, and as sulphur and oxygen are involved in it, while nitrogen, hydrogen, and potassium escape, Young-Chemistry requires us to write, instead of HO,SO_3, or H,SO_4, for sulphuric acid, H_2SO_4, while we write K_2SO_4 for sulphate of potash; on the other hand, instead of HO,NO_5, or H,NO_6, we must write H,NO_3, and instead of KO,NO_5, or K,NO_6, we must write K,NO_3.

By the mixing up of the two questions, the result is produced, that the majority of the formulæ used by the new school of chemistry are not intelligible to older chemists, without a good deal of preliminary troublesome consideration, which most men are too indolent to give.

The inconvenience caused by the change of an atomic weight, in the case of an important element, may be understood from the case of mercury: if the chloride of mercury be prescribed, it is necessary that the apothecary should know what school of chemistry the physician belongs to, in order that he may avoid the risk of poisoning the patient. If such be the practical difficulty resulting from the change of the atomic weight of a single metal, let us imagine the confusion that must ensue from the change of the weights of the metalloids, oxygen, sulphur, carbon, and silicon. And to add to the confusion in the case of the latter, the atomic weight is changed in a manner different from that employed in the case of the other metalloids.

Of the 57 elements, Mr. Odling changes the equivalent number of twelve, viz., oxygen, sulphur, selenium, tellurium, carbon, silicon, titanium, tin, tantalum, glucinum, yttrium, thorium; and of these elements, silicon is altered in a manner peculiar to itself, and glucinum, yttrium, and thorium, are also changed according to a law of their own.

The advantages of a decimal system of weights and measures are obvious to every intelligent man, and yet few believe that it will ever be adopted in England, in consequence of the practical inconveniences of the change; and it is well known that the introduction of the Calculus among English mathematicians was retarded for an almost incredible period, by our prejudices in favour of Newton's Fluxions. Now, no chemist of the new school can pretend that the

advantages of the new notation and atomic weights are at all comparable with those of the reforms just mentioned, one of which is still struggling hopelessly for a hearing, and the other of which took place only within the memory of many living men, after a struggle of more than a hundred years between reason and prejudice.

Independently of its new notation, there is nothing remarkable in Mr. Odling's book, which contains the usual amount of information to be found in manuals of chemistry, and, we must add, not always conveyed in the most interesting or instructive manner.

The fourth edition of Mr. Bowman's book is an excellent guide to the learner commencing his laboratory experience, and will be found a useful aid to the student preparing for an examination in chemistry. It should be remembered, however, that no such guide can dispense with the aid of a skilled practical teacher, under whose guidance the learner can acquire a knowledge of manipulation, in a few days, which he could never obtain from books.

Précis Iconographique Des Maladies Vénériennes. Par M. A. Cullerier, Chirurgien de Hôpital du Midi, &c., &c. Paris, Mequignon Marvis, 1861. Parts I., II., III., pp. 180. Numerous Coloured Drawings on Steel.

The success of former literary ventures has inspired the above enterprising firm with energy that might well be imitated by their comrades in trade of this country. Bernard and Huette's beautiful little book on Operative Surgery, and Goffre's on Bandaging, are pretty well known as examples of the perfection to which illustration can be carried as a means of instruction, and at what moderate cost.

The present work is on the same plan, and we have the pleasure of acknowledging the receipt of the first three parts of ten, which are promised to complete a volume of 700 pages, with 80 plates on steel, from drawings made by M. Levillé, after nature. It is impossible to speak in too high terms of the mode in which all parties concerned in the publishing of these works have done their part. Paper and printing are admirable; and the illustrations could not possibly be surpassed, for accuracy of delineation, and perfection of colouring.

The present numbers treat of gonorrhœa, and commence with a

short historical sketch of the disease from the times of Moses, through Hippocrates and his successors, to the days of confusion in the sixteenth century, when, for the first time, it became the fashion to look upon it as an off-shoot of syphilis. Passing from its history, the author deals successively with its seat, which, in accordance with routine rather than fact, he places at first invariably in the fossa navicularis; then he advances to the causes and nature of gonorrhœa. Under the latter head we have a full account of the views of Hunter, and those who followed him, in classing it with syphilis; and of the opposing views of the "*non identistes*" of whom Ricord is the modern exponent. This position he has attained by following out to demonstration, opinions long since fully taught in this city, by the late Mr. Hewson and Professor Porter. Both these gentlemen in their lectures at the Meath Hospital, and elsewhere, demonstrated the existence of urethral chancres as the cause of apparent syphilization by the gonorrhœal secretion. Had their observations been attended to, this vexed question would long since have been set at rest.

Little now can be said of the symptoms of gonorrhœa, and we pass on to the treatment. Mr. Cullerier is strongly opposed to the abortive system, among the supporters of which we find the name of Carmichael quoted; nor does he seem to be aware of the value of very weak astringent lotions in the early stage; in fact, the routine treatment of copaiva and low diet prevails; and injections are not allowed to come into play till the inflammatory period has quite passed by. For this wide-spread neglect of the most valuable means of cure, the violent abortists are to blame; and it will take time and patience to bring people back to the due appreciation of injections, as the most reliable curative agent we possess in all stages of the disease.

The remainder of the first number is taken up with some of the accidental local complications of gonorrhœa—such as phimosis, paraphimosis, chordee, &c.; and, however valuable as a treatise for the student, it contains nothing that we need copy into our pages.

Similar remarks will apply generally to the second and third numbers, which continue the subject of gonorrhœa as it occurs in the female as well as in the male. We shall reserve further remarks until the numbers are complete, when we shall be able to take a more comprehensive review of the subject.

We have no doubt this work will have the large sale which its enterprising author and publisher deserve.

Consumption, its Early and Remediable Stages. By Ed. Smith, M.D., &c. London: Walton and Maberly. 1862. Post 8vo, pp. 447.

The author of this work tells us he has had four principal objects in view in writing it, viz., to take advantage of the growing belief of the day, that there is a stage of phthisis in which this disease is as remediable as it is irremediable at a later period; to write a practical work in which may be faithfully represented the actual condition of these cases, when regarded in the great numbers in which they have been brought before his observation; to treat the subject as far as possible on the inductive method, and on the improved physiology and pathology of the day; and to give practical effect to numerous series of special inquiries which have been made by him during the preceding seven years. In seeking to make the work practical, he has entered largely into all the questions which relate to food, exertion, climate, and others constituting hygienics, because such is in accordance with general feeling at the present time; because this part of medical knowledge is now being placed on the sure footing of scientific research; and because it must be through the conditions of the every day life of the patient that medicinal and other remedial agents may influence the constitution in so chronic a disease. For the same reasons he has entered fully into minute details, as it is upon them that the efficient working of a general plan essentially depends.

From the days of Hippocrates to those of Lænnec, consumption was distinguished by its general symptoms almost exclusively, but Lænnec introduced a new era, in which the state of the lungs took precedence of that of the general symptoms, and tubercle came to be regarded as the essence, the mark, and the starting point of the disease. It cannot be wondered at that this became the almost universal doctrine. Tubercle was something tangible, to be seen by every observer, and it came to be regarded as the essential feature of the disease, the cause of its progress in the lungs, and the source of injury to the general system; but now, at length, as we recede from the overpowering influence of Lænnec's great discovery, broader and juster views are being taken; the state of the constitution which leads to the deposition of tubercle is attracting attention, and we begin to see that tubercle is not the cause of consumption, but only a consequence of the diseased state of the system—not the essence of the disease, but only one of its results.

It is customary at the present day to mark the progress of phthisis by reference to the lungs only, and to divide it into three stages, of which the first is limited to the period of deposition of tubercle, the second includes softening of tubercle and destruction of tissue, and the third is that period when a cavity exists. To this classification Dr. Smith objects, and, going back to the teaching of Lænnec and Louis, adopts their division into two stages,—that of deposition of tubercle and that of destruction, to which he adds a prior stage, to include "all the conditions existing before any evidence of the deposition of tubercle is afforded," and it is the consideration of this first or "pretubercular" stage, its definition, recognition, and treatment that the present work is chiefly devoted.

The evidences of this stage are found to be associated both with the general system and the lungs, and to be co-existent as to time in both; and while these evidences must be variable in degree, as the type of health varies between "sanguineo-nervous" and the "lymphatic" temperaments, their general expression is of asthenia or lessened vital power. States of the general system common to other diseases with consumption, but in this latter associated with other special and local conditions.

The method of investigation pursued has been by examinations, into the precedent and present conditions, of all the patients presenting themselves at the Brompton Hospital, and, where practicable, comparing these with the results obtained by the author in his elaborate researches into the conditions of the body under varying influences, of which we gave a full analysis in our last volume.

It appears that, somewhat contrary to common belief, there was no one temperament exclusively found in phthisical patients, but that the two extreme types of sanguineo-nervous and lymphatic are largely diffused amongst them, the general manifestations varying somewhat, as we have already remarked, in consequence. The whole processes concerned in the function of alimentation are commonly lessened in vigour; the appetite seldom remains natural, but is somewhat lessened in respect of food in general, and of some foods in particular, and is commonly wayward and uncertain, and there is generally some derangement of the function of digestion, but this is frequently small, and in such cases is not important; the tongue is more or less discoloured, or loaded with a buff-coloured coat, presents enlarged and projecting papillæ, and is not unfrequently large and flabby; there is a sense of oppression

after meals, and tenderness on pressure over the epigastrium at most periods of the day, and a sour taste in the mouth and flatulency. These conditions are most commonly found with the lymphatic temperament, whilst in the sanguineo-nervous the tongue retains its usual size and colour, and remains clean.

The weight and bulk of the body are almost universally diminished, a fact indicating numerous conditions of great importance, but not necessarily dependent on a loss of nitrogenous tissue, or explained by it. But it appears from Dr. Smith's researches that, when there is a diminution in the food taken, when there is a less perfect assimilation of food, and when fat is disliked, the store of fat in the body is lessened, the elimination of fluid increased, the nitrogenous parts of the body are less perfectly restored, and the tone of the tissues is lowered. Dr. Smith has ascertained many very remarkable circumstances with regard to the elimination of fluids; in addition to the well-known influences of temperature, atmospheric pressure, exercise, and the quantity of fluid ingested, it appears the kind of food taken affects it materially; fat, flesh and animal foods preventing the elimination of fluid, and the use of starchy food favouring it; therefore, so long as an abundance of fat is supplied from without and duly assimilated, or there is an excess of fat in the body, there is a power to withhold the extreme emission of fluids, but when a person is losing fat, he not only loses weight *pari passu* with the loss of fat, but when the store of fat is exhausted, he loses weight in a rapidly increasing ratio, from the more rapid elimination of fluid; so the loss of appetite for fat and flesh has a far greater influence over the weight of the body, than the mere loss of weight from the want of these substances would account for.

In the early stages of phthisis the elimination of fluid by the skin, (perspiration), is, in the absence of inflammation, in excess, this not only cools the body injuriously and interferes with the heart's action, but wastes the body by causing a demand for vital transformation to supply heat from within; and, in addition to coldness of the extremities, it causes depression and exhaustion of the nervous power. While it is true that perspirations are most profuse in the latter stages of the disease, it is a mistake, Dr. Smith says, to think they are confined to these periods, on the contrary, he says they are met with, though in a less degree, in a majority of cases in the early stages.

The muscular power is commonly lessened; the circulation is

enfeebled and somewhat quickened; and respiration is shorter, shallower, feebler, and perhaps quicker. When first questioned it commonly occurs that the patient is unaware of any shortness of breathing, but he subsequently admits that on any unusual exertion, as ascending stairs, or running, his breath is short. He also frequently finds that this state of the respiration is increased after a meal, and if he eats heartily, or there be much dyspepsia, there is marked dyspnea. On carefully looking at the front of the exposed chest, it will commonly be found that the breath motion is lessened over the whole thorax, but particularly at the upper part of it; and, when the spirometer is used, it is found that the quantity of air, inspired per minute, is considerably lessened. The feebleness and shallowness of respiration thus manifested, must be attributed to weakened muscular power and impaired nervous influence; and the increased rate of respiration commonly conjoined with them, is probably compensatory for the diminished quantity of air taken in at each inspiration.

Dr. Smith also finds, that the vital capacity of the lungs, as shown by the quantity of air it is possible to expire after the fullest possible inspiration, is diminished even when there are no evidences whatever of the presence of tubercular deposits; but there are, he says, so many sources of variation in the results of spirometry that, until the case presents features which, in the hands of competent men, render spirometry unnecessary, we can seldom go beyond the fact of having ascertained the amount of air inspired, and must infer the cause of the supposed diminution with caution.

As a general observation, it may be stated that, at the early stage of phthisis, there is only a small or moderate amount of coughing, and what there is, is commonly short, and repeated a few times at each attack; it is not usually violent or causing much succussion, but sometimes it is spasmodic. It is usually excited by going into cold air, by a chill to the surface, and often by eating; it is frequently irritable in the early morning, and especially soon after rising. Dr. Smith makes some novel and interesting remarks on the mechanism of cough in general, in which, he believes, the pharynx takes an important part, and the greater part of the cough of early phthisis he attributes to hyperesthesia of the pharynx, The quantity of secretion expectorated is very small, and does not exceed one quarter or half an ounce in the day, and the chief sources of it in this early stage, are the fauces and pharynx, which are, in this stage, according to Dr. Smith, the chief sources of hemoptysis also.

We now proceed to discuss the conditions which are connected with the lungs. These are, first, lessened movements of the chest, to be detected by the eye, by palpation, or by measurement, as with the instrument invented by Dr. Sibson, or that of Dr. Quain, or better still, by measuring the quantity of air inspired; second, the vesicular murmur is less strong than occurs in health, both in ordinary and forced inspiration. On the patient inspiring forcibly, the inspiration sounds are, of course, increased considerably in intensity, but they are more or less tubular, and the vesicular sound is much less intense than occurs with the forced inspiration of health, there being still the same evidence of feebleness of inspiration; this serves to distinguish the feeble respiration of early phthisis from that of mere debility, *where the vesicular sounds and the trajet of the air become normal in deep inspirations;* third, as tubercle is deposited there is evidence of a localised and isolated obstruction to the current of air; fourth, dulness, on percussion, is a sign of great importance, but occurs in very different degrees, and under very different conditions; in the early stage there is an appreciable degree of dulness on the clavicles, and, indeed, over the chest in general, before the deposition of tubercle, but not till after the diminution in the expansion of the lung has been long continued.

The author offers the following summary of the evidences furnished by the external examination of the lungs:—

"1. When there is less breath-motion, less length of inspiration, and feeble, yet tolerably even, vesicular sounds, both with ordinary and forced respiration over the whole chest, or particularly at one or both apices, with or without slight dulness, on gentle percussion, of the clavicles, and without *rales* or any sign of bronchitis, we believe that there is the early or the pretubercular stage of phthisis.

"2. When there is dulness at least moderately pronounced and localised, and prolonged expiration, with, but sometimes without, flattening of the chest at the part affected, and with or without wavy or jerking respiration, and with unevenness of the respiratory sounds at the part affected, in addition to the signs of the first stage, and still without rales or other evidences of bronchitis, we consider that tubercle is deposited, and the disease in that part has passed into the second stage.

"3. When general bronchitis is also present, the diagnosis from the examination of the chest is almost impossible, and whilst the progress of the general symptoms may aid us, a correct opinion can only be formed after the signs of old bronchitis have disappeared, or the general evidences of phthisis both in the lungs and system have increased.

"4. The state of the general system is substantially the same, whether

before or soon after the first deposition of tubercle, but the degree of variation from health will have increased in the latter with lapse of time: hence, whilst this state must be considered in forming our diagnosis of phthisis, it is equally indicative in the two stages, except perhaps in degree."

Treatment.—Under this head, Dr. Smith first considers the indications for treatment, and the best method of fulfilling them, and then gives, in an empirical and categorical manner, a detailed statement of the whole plan he recommends. The first indication he holds to be to restore the bulk of the body by lessening elimination; for this he recommends, 1st. The inunction of oils and fats; lard, with the addition of a small portion of mutton suet, which renders it less liable to be rubbed off, being one of the best applications; spermaceti ointment, also, is very good; olive oil is, from its freedom from smell, least objected to by the patient, but has not sufficient viscidity; cod liver oil is objectionable because of its odour. 2nd. The application of cold water, which, by removing the atonic or relaxed state of the skin, always associated with an unusual tendency to perspiration, is, if effected with rapidity, very efficacious; but it must be applied so that tone may be restored without lowering the temperature of the body. 3rd. Clothing must be carefully attended to, so much being worn as will allow the skin to be cool, without the patient experiencing a cold sensation, and where the extremities are cold, it is essential that their covering should be abundant. 4th. Regulated but free exposure to the ordinary variations of the atmosphere is to be commended. 5th. Certain foods lessen the action of the skin, such as some of the forms of alcohol, coffee, fats and milk, and are consequently especially fitted for employment. The old and well-approved combination of rum and milk, or brandy and milk, in the proportions of two teaspoonfuls or a desert spoonful of spirit to half a pint of milk, is very proper, and especially in the early morning, when the skin is commonly very active. During the day no form is better than home-brewed ale, or, failing that, Dublin stout; but the dose should never be so great as to affect the head, nor should it be continued after the effect on the skin has been produced; and in the night hours, when perspirations are most frequent, food of almost any kind will lessen them. As for medicines, the well-known remedies, iron, zinc, lead, acids and vegetable bitters, lessen the action of the skin, sometimes also, valerian; and when the perspiration has an acid odour, alkalies are serviceable. All influences likely to increase elimination by the

kidneys and bowels, are to be avoided, such as drinking large quantities of water and other fluids, gin and purgatives.

The second indication is to restore the bulk of the body, by increasing the supply. There is very generally a deficiency of nitrogen in adolescence, in consequence of the diminution in the supply of milk, without a corresponding increase of nitrogenous foods. The proportion of nitrogen in bread is 1 in 22 ; but in milk it is 1 in 11, so that for every pound of milk omitted, there should be two of bread added; and it would require 5½ ounces of good, uncooked fat and lean meat, to supply as much nitrogen as is found in one pint of good new milk. In order that a large quantity of food may be taken, it is necessary to distribute it well over the twenty-four hours, and when the patient is unable to take sufficient food to supply the necessary quantity of nitrogen, Bouchardat's preparations of glutenized foods may be recommended, these are gluten bread, which may be toasted and eaten hot ; semola, the ground gluten bread, containing 80 per cent. of gluten, and chocolate, the best quality of which contains 10 per cent. of gluten. As the vital actions are greatly reduced during the night, it is important to supply food then as well as in the day, and the following is recommended by Dr. Smith as a scheme of daily diet:—

"1. Immediately on awaking in the early morning, ½ a pint of milk (hot if possible), alone, or with chocolate added, with bread and butter.

"2. For breakfast: ¾ pint of milk, with coffee, chocolate, or oatmeal, and eggs or bacon in addition.

"3. At 11 A.M. ½ a pint of milk, or of good beef tea, made from ox heads or shins, with bread and butter.

"4. An early dinner, with plenty of meat, and milk and egg pudding.

"5. An early tea, consisting of milk with coffee or chocolate, and bread and butter.

"6. An early supper of ¾ pint of milk with oatmeal or chocolate, and bread and butter; or two eggs with bread and butter, and milk to drink.

"7. During the night a cup of milk and a little bread and butter to be placed by the bed side and to be eaten if the patient should awake.

"By this mode a much larger quantity of food may be taken than would be possible if the food were given only at the usual meal hours, and as it will be taken in small quantities, the system will not be oppressed by it, and the vital actions will not be allowed to subside. It is a dietary which allows a considerable quantity of nutritious material, both nitrogenous and hydro-carbonaceous, to be stored up in the system, since it is rich in both classes of nutriment."

The third indication is to increase the vital actions, especially by stimulating the appetite and the assimilation of food, and improving digestion, by proper exercise and by regulating the kind of food used; for, as Dr. Smith shows, some substances are not only easily assimilated, but aid in the transformation of other foods. Under this head Dr. Smith includes means for increasing innervation and all the vital functions; but we must close our notice of this very valuable practical work with extracting the following remarks on promoting the expansion of the lungs, a prime object in the treatment of this stage of consumption:—

"The production of this complete expansion of the chest is oftentimes a circumstance of extreme difficulty, and sometimes it cannot be effected; but the difficulty lies not in any impediment to the entrance of the air, but in the defect of muscular power to expand the chest, or in the impossibility of inducing the patient to comprehend the method by which it is to be effected: hence, however great the difficulty, it lessens by practice, if the practice be carefully and intelligently made.

"The plan which we adopt is as follows:

"The patient is placed in a sitting or standing posture, with the trunk erect, the shoulders drawn downward and backward, and the chest thrown forwards. The mouth is then kept a little open, and the patient is directed to inhale gently whilst he very evenly expands the chest to its utmost limits; and at the end of the inspiration he is directed to make increased effort, and then to retain the chest in its expanded state for two or three seconds before expiration is commenced. If the mouth be shut, the nostrils cannot admit the volume of air with sufficient freedom; and if, instead of an even and somewhat gentle inspiration, the air is drawn in quickly and forcibly, like suddenly snatching asunder the handles of a pair of bellows, it is impossible for the lungs to become perfectly expanded. If, at the end of the inspiration, there be not increased effort made, the mechanical act of distension is materially lessened, and the good which is effected is imperfect; whilst there is a manifest advantage in keeping the lungs fully expanded for a few moments, and afterwards in preventing a collapse of the chest by a sudden and rapid expiration. The posturing of the chest is also important, not only by inducing that position in which the cavity may be most completely enlarged, but, by placing the relaxed and elongated pectoral muscles upon the stretch, and holding the shoulders firmly backward, the greatest amount of muscular power may be obtained.

"There are two of these conditions which it is very difficult to fulfil, viz., the prevention of a rapid and gasping inspiration, and the final effort at the end of inspiration to effect the complete distension of the

lungs. The former is more common in cases where the respiration is short, and the person is nervous and defective in readiness of apprehension, and in such cases is very difficult of attainment; whilst the latter is chiefly associated with much atonicity of the muscular system, and in the most intelligent and painstaking person is only perfect after long practice. Its increase is, however, a good measure of the improvement of the patient.

"On deep inspiration we find that the apex of the lung is not filled until the very end of inspiration, and we have explained this at page 202, by the common direction of the Bronchi, which carries the current downwards, and also by the great extent and direction of motion of the lower ribs, so that whilst in inspiration the air is admitted into all permeable parts of the lung, the lower part is first *filled* by voluntary effort, and then the upper: hence, for various reasons, we see the importance of the effort to inspire at the very end of the act of inspiration, with a view to cause the complete expansion of the apices of the lungs.

"We have found it always necessary to have the chest uncovered, and to watch carefully the movements of the parts during this procedure, so as to appreciate any defect in the performance; and moreover, it is commonly needful that the physician should show the action upon himself. It is needless to state that it is an easy process to those who can do it; but as its entire value rests upon the degree of perfection with which it can be effected, it demands that the physician be enabled from time to time to inspect the movements and correct their defect."

PART III.

MEDICAL MISCELLANY.

Reports, Retrospects, and Scientific Intelligence.

RETROSPECT

OF THE PROGRESS OF SURGERY DURING THE LAST DECADE

BY

MAURICE HENRY COLLIS, M.B., F.R.C.S.I.,

Surgeon to the Meath Hospital and County Dublin Infirmary; Member of Council R.C.S.I., and of Council of Surgical Society.

(*Continued from page* 192.)

GENITO URINARY ORGANS.

The operation for Phymosis needs some comment. In Mr. Erichsen's Surgery, we have an emphatic condemnation of slitting up the prepuce for the congenital form of this affection, and a description of circumcision, in which, after cutting off the foreskin and slitting up the mucous covering of the glans, it is directed to trim off the angles and to *snip across the frenum.* Against this last direction an equally emphatic protest must be entered. Any meddling with the frenum is not only unnecessary but unjustifiable. It is the most sensitive part of the organ, and a wound of it is exquisitely painful and remarkably slow to heal; any curtailing of the folds of mucous membrane, which spring from it, will leave a cicatrix that will be more or less tight. Very troublesome constrictions of the glans result from this operation, which partakes very much of the character of meddlesome surgery. The skin of the prepuce is not so much in excess as the mucous covering is scanty. An operation, then, should have for its object to borrow from the skin in order to make up the deficiency of the mucous membrane. This can be done by drawing back the prepuce as much as possible, and freeing the

lining membrane by a succession of nicks either in the centre of the upper surface or at each side—a small bistoury, or, what is better, a pair of scissors will do this, and the operation will be trifling and almost bloodless. A stitch or two may be necessary at the angle of each nick, to prevent the reunion of their raw surfaces, or the same result may be secured by keeping the prepuce retracted, but at the risk of a temporary paraphymosis arising. The extra skin, which Mr. Erichsen thinks so much in the way, becomes inverted and supplements the deficiencies of the mucous membrane.

For phymosis, the result or concomitant of ulcers of the prepuce, the removal of an oblique ring may be required; but even in these cases we shall do well to keep as clear of the frenum as possible.

Stricture of the Urethra.—There has been but little added to Hunter's opinion of the ordinary locality of stricture, viz.:—"Every part of the urethra is not equally subject to stricture; for there appears to be one part which is more liable to them than the whole of the urethra besides, namely, about the bulbous portion. We find them, moreover, sometimes on this side of the bulb, but very seldom beyond it. I never saw a stricture in that part of the urethra which passes through the prostate gland." Mr. Thompson[a] divides the urethra into three regions, excluding the prostatic portion, in which no true stricture has ever been found upon *post mortem* examination. These regions are:—First, from the posterior boundary of the membranous portion 1¾ inches forward; second, the centre of the spongy portion; third, from the external orifice backwards for 2½ inches. Out of 320 strictures 215 occurred in region one, 51 in region two, 54 in region three. The most common point of all was the junction of the membranous and spongy portions, next the anterior boundary of region one; while, between these two points six examples of stricture are met with for one behind the junction. Mr. Smith's statistics corroborate these. Stricture in the prostate is affirmed by Ricord and Leroy-d'Etiolles; but the museums of London, Edinburgh, and Paris present no example of it. Narrowing of the canal by the pressure of enlarged prostate no doubt occurs frequently, but this must be distinguished from true stricture. In the Museum of the Meath Hospital there is an example of what is generally, but erroneously, termed bridle stricture, situated in the prostatic portion. It is one of those small fibrous bands which stretch across the canal from side to side, and which owe their existence to an elongation of a morsel of lymph which has been effused on the surface of the urethra, and has become organised after acquiring an attachment to the opposite side of the canal; or, as Mr. Thompson suggests, to the perforation of a follicle by an instrument. The true bridle stricture of Sir Charles Bell is a fold of thickened mucous membrane, of crescentic form,

[a] Stricture of the Urethra. Jacksonian Prize, 1852.

partially obstructing the urethra by running half way across it, or obliquely; sometimes two or three such partial strictures coalesce, making the floor or sides of the canal irregular and rough, and, as it were, flattened. The other is scarcely a stricture, but either a free band of lymph or a short false passage.

Perineal Section.—About 10 years ago there was a hot controversy upon this subject. This has now died away, mainly owing to a better definition of terms, and to a more perfect comprehension of proper principles of action. We are in a great measure indebted to Mr. Henry Thompson for this result. Mr. Syme, it will be remembered, contended that such a thing as impermeable stricture did not exist. By many he was misunderstood as denying the existence of obliterated urethra. His assertion went no further than to declare, that in every case in which urine could make its way from the bladder through the urethra, a catheter could be got into the bladder by time and patience. This statement of Mr. Syme's coincides with Mr. Liston's experience, and is not contradicted by that of other surgeons. It does not follow, however, that cutting operations may not be needed for the immediate relief of a distended bladder, or for the cure of a contractile stricture. The latter is the condition which Mr. Syme proposed to remedy by "external division." Prior to him the rule had been that if a stricture were permeable by instruments external division is contra-indicated. Mr. Syme proposes to reverse the rule, namely—"permeability is an indispensable pre-requisite to the performance of external division." He found that many strictures were so callous, and had such an inveterate tendency to contract, that within a few hours after dilatation they were as narrow as ever. He proposed to divide these by an incision, carried from behind the stricture forwards to the sound part of the urethra. His narrow grooved staff, with handle of full size, down to the commencement of the curve, is well known. By a careful use of this staff the extent of the stricture anteriorly is readily ascertained, and its complete division secured. A new plastic material unites the divided surfaces, and is capable of being stretched by the use of bougies so as to make future contraction of great rarity.

Other surgeons, prior to Mr. Syme, had divided strictures by cutting down upon the point of a staff passed as far as the stricture, and then cutting through it backwards towards the bladder, either with no further guide, or by the assistance of small grooved directors insinuated through the stricture from the wound. To this operation the name of "perineal section" is limited. To Mr. Syme we are indebted for the operation of "external division," by which the urethra is opened behind the stricture, upon a grooved staff, and the stricture divided by a cut forwards along the raphe. Mr. Bryant, in his *Clinical Surgery*, gives a very good *resumé* of the subject from a practical point of view; but, as is usual with him, with no reference to authorities. Few years pass by without some surgeon

devising an instrument for dividing stricture by concealed knives or scarificators introduced into the urethra. This internal division of stricture has never had much favour in this country, and the instruments, with the exception of Stafford's, are almost forgotten or unknown. A more dangerous mode of treatment can scarcely be conceived; and it is no matter of surprise to find M. Nelaton state that in more than half the number of incisions performed in Paris there is hemorrhage, and often to an alarming amount. Dr. James Arnott[a] states, that internal incision has often proved fatal from hemorrhage, infiltration of urine, and pyemia. He has also forcibly pointed out the impossibility of limiting the incision to the stricture, if it be made by an instrument which is either pushed backwards or drawn forwards; and he has striven to obviate all these dangers and difficulties by an instrument which shall cut by direct pressure upon the previously measured stricture.

The Splitting of Unyielding Strictures, by a dilator, has been largely practised by Mr. Holt, of Westminster Hospital, and apparently with great success.

The infiltration of urine and abscess which would naturally be supposed to follow from such a proceeding do not do so; and this is the more extraordinary as it is generally the floor of the urethra that gives way. This plan of treatment is on its trial. The instrument consists of the bivalve staff invented by Perréve, of Paris, with rods of various sizes, which are run down between the blades, so that the stricture is suddenly distended by an irresistible force, and is ruptured accordingly. If the operation be successful it has the merit of being rapidly so; and the cure is said to be permanent. Mr. Holt also uses this instrument for dilating strictures in the ordinary and more gradual manner, which is in general acceptance with surgeons. Its principle of action in this mode of application is identical with Mr. Hutton's railroad catheter, and Mr. Wakley's modification of the same.

Mr. Heath, of the West London Hospital, has corroborated Mr. Holt's treatment in a paper in the *Lancet*.[b]

In Lithotomy—various improvements have been effected. First, in the mode of securing the patient. If the chloroform is to be used, the old plan of fastening the hands to the feet must be given up, as the chest is thereby dangerously compressed, and respiration impeded. Though no death may hitherto have taken place from neglect or ignorance of this matter, yet it is so very easy to understand that such might occur that it is necessary to draw attention here to the point, though so very self-evident. In the operation we find *Buchanan* using a *rectangular staff*, and making his incision in the outer parts in a rectangular form, while the internal incision turns out to be identical with that of the ordinary

[a] Medical Times and Gazette, February, 1861.
[b] Lancet, August 31, 1861.

incision into the bladder and prostate in the lateral operation. *Allarton*[a] *has revived the Marian operation* (*en boutonnière*), and has a host of adherents.[b] He pushes the point of his knife into the central raphe of the perineum, in front of the anus, with his left fore-finger in the rectum and the back of the knife towards the anus; by depressing the curve of the staff towards the rectum, he opens the membranous portion of the urethra, and then gets a probe into the bladder. The staff is then withdrawn, and the finger follows the probe into the wound, and the prostatic portion of the urethra is now gradually dilated to the needful amount. This operation is essentially the right thing for small stones, and even for those of larger size it is not unsuitable, as the use of the lithotrite can readily be combined with it. In children also, whose prostate is small, it is a safer operation than lateral lithotomy. For the removal of foreign bodies in the bladder or posterior part of urethra it is also invaluable. I had occasion to perform such an operation in the year 1853; and from experiencing its facility and safety, I recommended its adoption for the extraction of foreign bodies from the bladder. Its applicability for stone became also evident to me at the same time; but I did not wish to put it forward on theoretical grounds; and, before I had an opportunity of testing it, Mr. Allarton anticipated me.[c] The main objection made to median lithotomy is that it substitutes dilatation and laceration of the prostate for incision. This, however, is an error. The lateral, or even bilateral incision of the prostate gives an aperture much too small for the extraction of an average calculus enclosed in the blades of a forceps; by the force required to extract it the prostate is more or less lacerated. No doubt the prostatic tissues are elastic, and yield to some extent, but not enough to avoid laceration in most cases. Now it is manifest that the laceration or distension which springs from a central wound in the gland will be less liable to extend beyond the limits of the gland than that which springs from a wound reaching almost up to the verge of the gland. There can be no doubt that most of the deaths in lateral lithotomy (which amount to 20 per cent. of cases operated on) are due to the wound extending, either primarily or by subsequent dilatation, beyond the limits of the capsule of the gland. Besides, it is found that separation of the fibres of the gland to the necessary amount can be effected without laceration of the mucous membrane, and that the highly dangerous infiltration of urine is thereby avoided. Mr. Allarton does not give chloroform, as the voluntary expulsive power of the bladder is most useful in the removal of the stone. Many of his patients were up and

[a] Lithotomy Simplified.

[b] Teale, of Leeds, &c. Ward, Lancet, June, 1860. Hall, Lancet, September, 1860. Hinton, Association Journal, April, 1855.

[c] Dr. King, of Hull, Edinburgh Medical Journal, January, 1857. Dublin Quarterly Journal, Vol. xx.

about on the day after the operation; and he has enjoyed singular success as regards freedom from mortality. Even for large stones a modification of the operation is suitable. Mr. Lloyd, of St. Bartholomew's, has found that no inconvenience arises from extending the incision into the rectum. The clean wound of the sphincter heals readily by first intention; and there is no danger of recto-vesial fistula, as in Vacca and Sanson's recto-vesical operation, inasmuch as the neck of the bladder is not cut.

The following statistics have been furnished to me by Mr. Allarton, with great kindness, and may be relied upon as absolutely correct:—

Total number of cases 154; total deaths 14; average 1 in 11.

Particularised cases, or those in which the age of patient and size of stone are given.

Age of Patients	No. of Cases	Deaths	Average
10 and under,	56	2	1 in 28
11 up to 20,	16	1	1 in 16
21 up to 30,	10	No.	
31 up to 40,	6	No.	
41 up to 50,	6	2	1 in 3
51 up to 60,	13	1	1 in 13
61 up to 70,	26	7	1 in 4
71 and upwards,	6	No.	
	139	13	

Thus leaving 15 cases not particularised, and 1 death to them.

Of these deaths, one was the case of Mr. Erichsen, at the University College Hospital, a case which was doomed, no matter what the operation. Another case died of *diphtheria* a considerable time after the operation (17 days).

Altogether the results are very good, since they are fair average cases, not done by any one celebrated or successful operator, but by 42 different operators, many operating for the first time.

There was a controversy, in the year 1856, as *to the mode in which Liston held his knife* in cutting for the stone. Mr. Ferguson affirmed that he had held it underhand, and that the delineations in Miller's, Pirrie's, and Erichsen's Surgery were erroneous. Mr. Syme took the opposite view, and showed the danger of plunging into the pelvic viscera a knife with the fore-finger held on its back. Mr. Erichsen and others took a middle course, and asserted that Mr. Liston changed the position of the knife according to circumstances—in the first incision underhand, when striking the staff overhand. Whether this be correct as regards Mr. Liston may be a matter of opinion. It may also be a matter of indifference how the knife is held in the first incision, although it will be more graceful to

hold it underhand; but in striking the staff, if the surgeon would avoid the too common error of striking too far forward, he must hold his knife as a pen, but with the back of the fingers facing upwards; depressing his wrist to the utmost, he must strike upwards (anatomically speaking) from the posterior angle of his wound. In executing this manœuvre the extensor muscles are put upon an almost painful stretch in order to depress the wrist, and at the same time to elevate the points of the fingers. To strike the staff with the knife held underhand is difficult and uncertain; the point of the knife will be advanced obliquely if great care be not taken; while with the knife held as a pen, and steadied between the thumb and first two fingers, with the handle lying between the root of the thumb and fore-finger, as the feathered end of the pen does in writing, the natural direction imparted to it in the movement is straightforward, with a slight upward tendency as regards the operators, and as regards the patient it is directly towards the membranous portion of the urethra. If made from the posterior angle of an incision which extends—as the first incision for lateral lithotomy should do—as far behind the anus as in front of it. Mr. Erichsen's view, and that of Mr. Syme, approach theoretical accuracy more nearly than Mr. Ferguson; but none of the pictorial representations in the books are to be relied on. None of them give the position above described; and in all the fore-finger is much too far from the point of the knife. No doubt each operator will naturally hold the knife as is most convenient to himself; but those who have to form their hands will find the above method most advantageous.

Some valuable statistics of lithotomy are given from the Norfolk Hospital,[a] where for upwards of 80 years a careful record of these cases has been kept:—Of 863 cases of stone operated on, 755 recovered, 108 died, or 1 in 8. The operations performed were:—

Lateral,.....	803;	Recoveries,	698;	Deaths,	105; or 1 in 7·65
Dilatation (females),	41	,,	39	,,	2 or 1 in 20
Lithotrity,.....	11	,,	11		
Median Lithotomy...	8	,,	7	,,	1 or 1 in 8

All the calculi are preserved and carefully tabulated, to the number of 982, besides 542 presented from various quarters.

For Removal of Stone or Foreign Body from the Bladder of the Female Mr. Syme[b] gives a good proceeding. He dilates the urethra, under chloroform, by a succession of bougies, until the point of the finger reaches the neck of the bladder, where, feeling the tense resisting fibres situated there, he makes a very slight incision, hardly more extensive than the blade of a narrow straight bistoury. The finger is thus enabled to enter the bladder, and the foreign body can be extracted by forceps, scoop, or hook, according to its nature. This combination of dilatation and cutting is

[a] Lancet, September 1, 1860.

[b] Observations in Clinical Surgery, 1861.

a judicious improvement on the use of either alone, inasmuch as it is not followed by incontinence, the small wound readily healing, and the stretched but not lacerated fibres quickly recovering their tone.

Abscess of the Prostate.—Mr. Hamilton[a] gives us a good diagnostic mark in cases of this kind, where, from the irritability, pain, and frequent calls to make water, the disease might be mistaken for inflammation of the bladder. In both cases the urine may contain much pus, and be turbid, but in abscess of the prostate the urine is acid, and remains so for some time, while in catarrh of the bladder it is alkaline, and rapidly putrifies.

The same writer has more than once drawn attention to the connexion between tubercular disease of the testicle and the "pustulo-crustaceous eruptions" of advanced syphilis.

Cystic Disease of the Testis.[b]—Attention has been drawn to the not infrequent confusion of cystic disease of the testis in an advanced stage, with encephaloid cancer of that organ. The particular form of the disease liable to be confounded with cancer is that in which the cysts are filled with a fibrinous material of a brownish-yellow colour, and pultaceous consistence. More than half of the specimens labelled as encephaloid of the testis in the Museum of the Dublin College of Surgeons are of this comparatively innocent nature; and the history of such of them as can be collected from the catalogue and elsewhere corroborates this view. The structure of the organ seems to favour the development of cysts; they are undoubtedly formed as a result of inflammatory action in the tubuli seminiferi which cuts off portions of the tubes by adhesion of their walls, or blocks them up by effusions of blood or lymph. The tubular structure and high vascularity of the organ makes it subject to the acute forms of cancer (encephaloid and melanosis), and not to schirrus. Genuine schirrus of the testis is, as far as my observation goes, an unknown affection.

Operations for the Cure of Varicocele and Varicose Veins are at present in great repute in France and England. The simplest and least dangerous of these are Vidal de Casis', Lee's, Erichsen's, Startin's, Ricord's, and Tufnell's methods.

Vidal inserts a pin behind the veins, and a wire in front of them, but through the same apertures in the skin; the wire is passed through holes in either end of the pin, and the two being twisted, the veins are compressed and gradually cut through.

Lee[c] passes two needles under the veins, and applies the twisted suture for a few days, until the vein is filled with a coagulum between the sutures; he then divides the vein subcutaneously.

[a] Dublin Quarterly Journal, May, 1851.
[b] M. H. Collis, Dublin Quarterly Journal, Vol. xxx.
[c] Medical Times and Gazette, January, 1853, &c.

Erichsen[a] substitutes, for Vidal's bar and wire, a simple loop of wire, which he gradually twists until it cuts its way out.

Startin[b] uses what he terms a bar-needle and clasp, which are convenient for many operations besides those on varicose veins. The bar-needle has a straight shaft and a curved extremity; the latter enables the operator to pass it readily under the vein, the former enables it to compress the vein when passed through. The clamp is a piece of wire with a loop at either end, which acts as the thread in the figure of eight suture.

Ricord makes use of two loops of hempen thread which are passed in opposite directions—one over and the other under the veins; the ends of each ligature are then passed through the loop of the other ligature, and drawn tight.

Mr. Redfern Davies[c] and Mr. Tufnell[d] substitute wire loops for thread; and the latter surgeon adds what he calls "retracting guides." These are simply threads of wire which are attached to each loop, and which enable the surgeon to lessen his compression of the vein whenever he pleases, or to remove the ligature entirely.

Mr. Davies found it impossible to remove the wire ligatures, in one instance, and was obliged to cut them close off, and leave them in the man's scrotum, where they appear to have permanently remained without the patient being incommoded by, or even conscious of, their presence.

All these modifications of metallic ligature are preferable to incision, excision, or caustic, though none of them are free from danger. In operations on varicose veins in the leg, it is advisable to place a pad on the vein above and below the point operated on, so that blood may not lodge there. There is no greater cause of troublesome and dangerous phlebitis than the presence of coagula in the veins. The danger may be reduced materially by the use of compresses; but in no case can operations on veins be considered other than uncertain and dangerous. In varicocele the use of elastic compresses and suspensories, cold douching early and late, and abstinence from the general exciting cause will cure many bad cases, and that with a surprising rapidity. The use of bromide of potassium (if it can be obtained pure) as an antaphrodisiac, in combination with iron, if necessary, is a useful adjunct; and everything should be tried before risking the patient's life by operation.

If the mortality were not more than one per cent. we should not be justified in letting our patient run even that small risk until all other means had failed. In varicose veins of the leg, the most perfect obliteration will not always cure the ulcers which have called for the operation;

[a] British Medical Journal, February, 1860.
[b] Medical Times and Gazette, May, 1860.
[c] Lancet, July, 20, 1861.
[d] Dublin Quarterly Journal, November, 1861.

and if we knew but all, relapses will be found to occur after ligature of the spermtaic veins, not to speak of the possible atrophy of the testis, for which our patient would not thank us. For the leg, a broad band of vulcanized India rubber tightly encircling the limb below the knee, as recommended by Professor Hargrave, will sometimes effectually compress the superficial veins, and drive the blood into the deeper channels, especially in thin subjects, and the plan is unattended with risk, and may fairly claim a trial.

For the Radical Cure of Hydrocele we have had two suggestions which are not improvements upon Sir Ranald Martin's now well established treatment. The one by Mr. Lloyd consists in the introduction of a grain of the red oxide of mercury into the cavity of the tunica vaginalis upon the point of a probe. Possibly in a case which resists injection of iodine this severer method might succeed. Cases, however, in which relapse follows injection of iodine, are very rare, and may generally be cured by a repetition of the injection. Among many hundred cases which I have seen in various places, I have only once known the first injection of iodine to fail; in this instance success followed on the third trial.

An attempt has been made to revive the old method by seton,[a] only substituting iron[b] or silver[c] wire for thread; this, however, not only is uncertain of success, but has been followed by suppuration and other mischief.[d] It should also not be forgotten that infiltration of the cellular tissue of the scrotum (which is apt to occur upon acupuncture, or the use of a seton), is at times a fatal occurrence. For these reasons these methods cannot be accepted as improvements in the treatment of hydrocele. In his *Observations in Clinical Surgery* Mr. Syme expresses disapproval of the wire seton.

ANEURISM.

The Treatment of Aneurism by Compression, justly termed the Dublin method, has attained a settled position in surgery, and needs no special notice at the present date. The names of Hutton, Bellingham, Tufnell, and Carte in connexion with the origin, the pathology, the literature, and the mechanism of this mode of cure, are familiar to us as household words. Few arteries will now be tied for external aneurism until compression has been found unsuccessful. Even in places where the most unreasoning opposition was given to it, recourse is now had to it, at least occasionally, and once fairly tested it will be sure to find favour. Mr. Erichsen[e] gives the following statistics as the result of the experience of London surgeons:—

[a] Chauliac, 14th century.
[b] Young and Simpson of Edinburgh.
[c] Erichsen.
[d] Davidson, of Lincoln.
[e] Cooper's Surgical Dictionary, 8th Edition.

In compression the failures were as 1 to 5·3, deaths as 1 to 16. In ligature the failures were as 1 to 3, the deaths as 1 to 4; this is exclusive of partial gangrene, secondary hemorrhage, and erysipelas, which frequently resulted from ligature.

For the cure of aneurisms which are not amenable to compression or ligature, other measures are suggested in the form of galvano-puncture, injection of perchloride of iron, and manipulation. The formation of an eschar by chloride of zinc paste, applied over the sac, has been successful in the hands of Bonnet, of Lyons, in a case of subclavian aneurism. Galvano puncture, first introduced by Mr. Phillips, in 1832, has been revived by Mr. Bonnet. It is a very painful process, and withal uncertain, not to say dangerous, though less so than M. Pravas' injection of perchloride of iron, which is by no means to be considered in the light of an improvement. There remains the manipulation of the sac, by which the operator endeavours to loosen some of the softer clots in the aneurism, in order that they may be driven into the distal portion of the injured artery, and by blocking up the current, lead to a consolidation of the tumour. This method, due to the inventive genius of Fergusson, is mainly applicable to such tumours as lie at the root of the neck, and which leave no room for pressure or ligature on the cardiac side.

Mr. Ernest Hart,[a] surgeon to the West London Hospital, has ingeniously combined flexion of the limb with pressure; this improvement has been successfully followed by Mr. Shaw,[b] of the Middlesex Hospital, and by Mr. Oliver Pemberton,[c] of Birmingham. The same method has been adopted for the checking of hemorrhage from wounds of the palmar arch. The fingers are flexed upon the palm, and the fore-arm upon the arm, and retained thus by bandages. I have tried flexion in popliteal aneurism, but without success; nevertheless I have a high opinion of its value, and believe it should be added to compression where the latter is not sufficient alone.

Of Operations for Ligature of Arteries we have a novelty in the late Professor Porter's[d] method for ligature of the common femoral. He made a transverse incision half an inch below Poupart's ligament of about four inches long. In thin persons the artery is at once exposed, lying by itself, and it can be secured quickly and bloodlessly, without fear of injury to the vein. The objections to this operation, which will naturally occur, are the injury to the lymphatic vessels, and consequent tendency to erysipelas, the liability to gangrene from obstruction of so large a trunk as the common femoral, and the risk of secondary hemorrhage,

[a] Medico Chirurgical Society, Lancet, May 7, 1859.

[b] Medico Chirurgical Society, Lancet, May 7, 1859.

[c] Lancet, September 3, 1859.

[d] See a paper by his son, Mr. G. H. Porter, in the Dublin Quarterly Journal, Vol. xxx.; also Power on the Arteries.

owing to the number of branches given off in close proximity to the seat of ligature. It is to be feared that these objections will prevent this very simple operation from meeting with popular acceptance, and will outweigh, with most people, the advantages which it undoubtedly possesses of leaving the vein at a distance, and unmolested by the ligature. In a case in which it was lately adopted, the patient died of secondary hemorrhage, owing to an accidental high bifurcation of the vessel; the profunda was given off half an inch below Poupart's ligament, immediately above the spot where the vessel was tied; so that in fact the femoral, and not the common femoral, was ligatured; in the lower part of the artery there was a perfect clot; in the upper, the merest fragment, which might even be due to *post mortem* coagulation. The operation however is still *sub judice.*

Some brilliant and daring operations by the old method of cutting into the sac and tying the artery at the bleeding point, have been recorded by Mr. Syme in his *Observations in Clinical Surgery.* One especially deserves notice for a novel expedient which rendered the operation possible, and which well displays the daring and coolness of that distinguished surgeon. The tumour was very large, and extended above the clavicle, so that ligature of the subclavian became impossible, and amputation at the shoulder-joint seemed at first the only resource. The rest must be told in the words of Mr. Syme:—"Before proceeding to this desperate remedy I felt desirous of ascertaining the state of matters in the axilla, and therefore proceeded in the following manner:—

"On the 1st of February, chloroform having been administered, I made an incision along the outer edge of the sterno-mastoid muscle, through the platysma myoides and fascia of the neck, so as to allow a finger to be pushed down to the situation where the subclavian artery issues from under the scalenus anticus and lies upon the first rib; I then opened the tumour, when a tremendous gush of blood shewed that the artery was not effectually compressed; but while I plugged the aperture with my hand, Mr. Lister who assisted me, by a slight movement of his finger, which had been thrust deeply under the upper edge of the tumour, and through the clots contained in it, at length succeeded in getting command of the vessel. I then laid the cavity freely open, and with both hands scooped out nearly seven pounds of coagulated blood, as was ascertained by measurement. The axillary artery appeared to have been torn across, and as the lower orifice still bled freely, I tied it in the first instance. I next cut through the lesser pectoral muscle, close to the clavicle, and holding the upper end of the vessel between my finger and thumb, passed an aneurism needle so as to apply a ligature about half an inch above the orifice. The extreme elevation of the clavicle, which rendered the artery so inaccessible from above, of course, facilitated this procedure from below."

All went on favourably; the ligature came away on the thirteenth day;

six weeks after the operation the man was dismissed cured. An equally daring operation on a gluteal aneurism will be found in the same book. These cases bring to mind an anecdote told of a distinguished French surgeon, which, whether true or not, exemplifies what may be done by coolness in the most dangerous emergencies. Having by accident opened the internal carotid, when operating in the region of the tonsil, he instantly checked the alarming arterial hemorrhage by compressing with one hand the carotid against the transverse process of the cervical vertebra, while with the other he coolly went through the steps of laying bare the vessel, and when he had accomplished this part of the operation, laying down his knife and taking up the needle he passed the ligature round the artery, never letting go his grip of the patient until the vessel was secured, and the patient's life safe, at least for that turn.

TETANUS.

Professor Haughton has brought forward some cases in which nicotine appears to have acted as a remedial agent in this formidable affection. His reasonings were founded on the fact that nicotine is an antidote to strychnia; and regarding the physiological similarity of the action of strychnia and of tetanic spasms, he was led to conclude that the antidote for the former might counteract the latter. Cases in which it has been tried show that it has a marked control over spasms of the respiratory muscles. It is to be hoped that this remedy will be fairly tested both in traumatic and idiopathic tetanus.

INJURIES OF THE HEAD.

The name of Mr. Prescott Hewett may well be associated with this subject, both in consequence of his painstaking course of lectures in the *Medical Times and Gazette*, and for his article in *Holmes' System of Surgery*. In the latter we have an admirable epitome of the subject, from which the following extract is made :—

Depressed Fracture.—"The principle of noninterference holds good in a comminuted fracture, even with depression of the fragments, provided there be no wound of the scalp and no symptoms. It is now an established rule in our metropolitan hospitals that simple fractures of the skull, with depression and without symptoms, are to be left alone. The depression may be so marked as to be easily detected; and yet so long as there are no symptoms all operative interference, of whatsoever kind, is carefully to be avoided. In such a case recovery may be as rapid and as uninterrupted as if there had been no depression of the bone." A caution, however, is to be given in such cases to the patient that serious results, from intra-cranial growths and otherwise, may result from this unrestored depression. The line of treatment for such fractures, complicated with wound, is different; as Sir A. Cooper and Brodie have shown, compound fractures, with loose or depressed fragments, lead to suppuration; and to

prevent the pus from spreading under the bone its removal is called for.—P. 118.

Concussion.—Mr. Hewett's experience and reasoning go against the occurrence of concussion of the brain, as a cause of death, without traces of injury in the brain substance. In all suspected cases the heart and spinal chord should be examined as well as the head—the first for rupture, the second for extravasation. Many of the recorded cases of sudden death from supposed concussion he resolves, by analogy, into one or other of these. He would also attribute cases in which partial paralysis and loss of memory occur after injury to some extravasation of blood, or to some local injury to the brain-substance, rather than to concussion. This cannot be looked upon as other than conjectural; and when we compare cases of undoubted concussion with these, we cannot fail to be struck with the very gradual manner in which the symptoms coincide and run into one another; the more so when we compare cases of what are very graphically styled MENTAL *concussion*, where the whole train of symptoms indicative of arrested or depressed action in the brain-substance follow on a mental shock. In such cases all the immediate symptoms of profound depression, inclusive of irregular or imperfect paralysis of all voluntary, and many involuntary muscular actions are followed up by copious phosphatic deposits in the urine, impairment or perversion of the memory, torpor of the intellectual faculties, &c., in a manner not to be confounded with the more local, and possibly more severe, manifestations of injury due to the presence of a coagulum, or the existence of a rent in the substance of the brain.

In accordance with the views of Dupuytren and M. Fano, and in opposition to Sanson and Boinet, he holds, that contusion of the brain has no symptoms special to itself, and that its existence may be inferred, but as yet cannot be proved during life. He thinks that many of the cases of partial paralysis and failure of memory, after injuries, are due to this cause, and not to concussion.

Abscess in the Brain.—Dr. Detmold[a] has, within the last few years, followed the example of Dupuytren in plunging a knife into the substance of the brain, in search of pus; his incisions were repeated on three occasions, and varied in depth from half an inch to one inch and a half, a probe being passed into the wound, and reaching to the lateral ventricle. Matter was found on two occasions; but, in spite of this, the man died after the third incision, seven weeks subsequent to the first, and more than three months after the compound comminuted fracture which necessitated the treatment.

FRACTURES.

Starched Bandage.—That muscular action is the chief cause of displacement in fractures of the long bones is admitted as a general rule. The

[a] American Journal of Medical Science, No. 37.

necessary corollary to this rule is that efficient control of the muscles will mainly remedy such displacement. The era of extension and counter-extension as a means of counteracting, wearying, and paralysing muscular action, but not controlling it, seems to be passing away. Men are now alive to the impossibility of overcoming the disturbing power of the muscles by these means, and to the mischief of attempting to do so. There would appear, indeed, to have been always a struggle between those who used these violent measures and those who tried simply to leave nature to effect the needful repair, without further interference than was necessary to ensure perfect repose. But unfortunately, as in many other branches of medicine and surgery, the dogmas and theories of the schools prevailed to the exclusion of more simple and rational procedures. From the time of Hippocrates there have been practitioners in every civilised community who used their bandages smeared with white of egg and flour, their plaster moulds, their starch, or gum, or waxed apparatus as effectually as many of the modern supporters of the *appareil immobile.* But these men have been, as a rule, outside the pale of the profession, and the prejudices of cast prevailed to exclude from due consideration the principles which their practice involved. Witness the Protest of Fabricius ab Aquapendente against a slight modification of the method as proposed by some of his cotemporaries—"Nos autem principes medicinæ sequemur." Although casual mention is made of the immovable apparatus in the writings of Fabricius, as also in those of Paré, Wiseman, and others, yet it remained for quite modern times to introduce it into general recognition as an orthodox means of treatment, and to elicit the principles which are to guide its application and ensure its success. Belloste, in the last century, Larrey in the early part of the present, led the way; and the latter surgeon stamped it with his approval as the method *par excellence* for the treatment of fracture. It is to the late Baron Seutin, of Brussels, however, that we are mainly indebted for bringing into note the starched apparatus, and for showing how it may be applied at the earliest stage of fracture, not only without danger to the limb, but with a certainty of shortening the period of repair. To Erichsen,[a] Gamgee,[b] and others[c] is due the credit of popularising this mode of treatment in these countries.

The old theory of Duhamel and Dupuytren, by which it was supposed to be necessary that a certain quantity of provisional callus should be thrown out and ossified as "nature's splint," is shown to be unsound. The most rapidly and best consolidated fractures are those which have united by the first intention, without a particle of provisional callus, and the connexion between inefficient control of muscle and such superabundent effusions is undeniable. In such bones as the tibia, firm bony union between the

[a] Science and Art of Surgery.

[b] The Advantages of the Starched Apparatus.

[c] On the Union of Fractured Bone. Dublin Quarterly Journal, Vol. xix.

broken ends is attainable in four weeks, or even less, where there is only a thin layer of interposed lymph to organise and ossify; whereas, if a mass of ensheathing callus is thrown out, it will take at least six weeks before this thick and low-organised mass is even imperfectly ossified, and it is more than probable that the true uniting layer between the fragments does not commence to be ossified in such cases until the ensheathing callus is nearly perfected: hence, in these latter cases, weakness in the limb, and a tendency to œdema remain for a long time persistent; and when the patient goes about, there is a certain amount of risk of refracture. Other and more palpable advantages of the starched apparatus are the facility with which the patient can be moved about when the case is dry. Patients with comminuted fracture of both bones of the leg, for example, can not only be turned in bed freely, but may get up on crutches on the third or fourth day after the fracture: hence the muscular system is kept in tone, and the weakening effects of a prolonged confinement to bed are avoided; in many instances also the patient is able to attend to business after the first week, if his occupation be of a sedentary nature.

The mode of applying the starched apparatus in general favour is as follows:—

The limb is wrapped in cotton wool so high as the middle of the joint above the seat of fracture. For example: if the tibia be broken, the wool must extend half way up the thigh. The layer of wool must be thick, especially over the seat of fracture, and over the joints and bony prominences. Splints or porous pasteboard, well softened, and soaked or rubbed well with starch, are now placed at each side of the limb, and behind it, extending as high as the wool. In the example adduced the lateral splints are furnished with portions for the sides of the foot, while the posterior splint extends only to the hollow above the heel; in stout persons an anterior splint may be needed. A roller-bandage, well soaked in starch, is now applied evenly over the splints with sufficient tightness; the splints are graduated in width, so as to allow an interval of half an inch at least between their margins. A second layer of bandage may be applied over the first, especially in large people, or in fracture of the thigh or humerus. Exposure to the air, or the application of hot sand-bags will dry the case in 24 or 36 hours.

This case should be applied as a rule as early as possible. If applied before effusion has taken place, it will modify and control it, without the possibility of exerting injurious pressure. The elasticity of the cotton admits of unavoidable swelling, and checks what would be excessive, and this without risk. If effusion has taken place, the same elastic pressure checks its increase, and promotes its absorption. The surgeon has always a sure criterion that his pressure is not interfering with sufficient circulation if he leave the nails uncovered, and observe the colour and movement of the blood underneath them. The feelings of the patient are not a

sufficient guide, as it is well known that gangrene of a limb has occurred without any complaint of pain being made; but, if cotton be used in sufficient quantities next the skin, strangulation cannot take place. It makes a difference of at least 10 days in the patient's convalescence if the apparatus be delayed until effusion arises and subsides; the reparatory process is interfered with, delayed, and checked by every excess of action in the part.

This immediate application of the immovable apparatus is the peculiar feature and great improvement of modern practice. Those who object to it are those who have seen mischief arise from its improper application, or who have not been at the pains to understand its principles; none who have once tried the method, as it ought to be applied, will, as a rule, follow any other. When the case is dry, which will be in 24 hours, or sooner, if hot sand bags are placed round it, it is to be slit up along the interval between two of the pasteboard splints; the surgeon can now examine each side of the limb by turning down the lateral halves of the case in succession, an assistant keeping the limb by firm and gentle pressure in contact with that half of the splint which is not at the moment turned down. Complete inspection of the limb, without any disturbance of the fracture, is thus obtained. Any irregularities can be redressed by some extra padding with cotton wool, and, as the limb shrinks in size, the case is pared to fit it. An external bandage is applied to keep all in place, and as soon as all traces of effusion have disappeared, this outer layer may be starched, and the patient allowed to leave his bed. In this way, in favourable cases, where the apparatus is applied early, a patient may be able to be up, and out walking on a crutch, with the limb in a sling, in three days after fracture.

Baron Suetin used dextrine as a readier material than starch; it has the advantage of drying more rapidly. Plaster of Paris is also used to saturate porous bandages, and is still more remarkable for rapidly fixing the limb; in children, it has a manifest advantage. White of egg and flour make a very firm mould and light, but in warm weather it is apt to become offensive. As starch is a universal commodity, it will, perhaps, be the general favourite, though where choice can be had, it would not be selected before dextrine or gypsum.

Whether we apply the *appareil immobile*, or any other form of splint, our object must be to control the action of all muscles which have either origin from, or insertion into the fractured bone. This gives us a rule, pointed out so long ago, at least, as by Pott, namely—that no apparatus is worth anything which does not control perfectly the articulation above and below the seat of fracture.

Fracture of the Femur.—Scarcely a year passes by without some ingenious surgeon modifying our fracture apparatus, and in general these alterations apply specially to the treatment of *fracture of the femur.* It

were impossible, even if likely to be productive of good, to specify all that seems deserving of commendation in these mechanical appliances. In Hamilton on Fractures and Dislocations, a large collection of these will be found, to which may be added Dr. Gibbs' expanding splint, Winchester's jointed splint, Dr. Zachariah Johnson's, Dr. Bevan's, and Mr. Butcher's splints.

The young surgeon who feels within him the promptings of ambition to add to the *armamentarium chirurgorum*, will do well to study what it already contains, before expending his ingenuity in devising splints for fractured femur. Those who may find it expedient to employ extending and counter-extending force, will find the *accumulators* of great service. These are thick ropes of vulcanised India rubber, with rings at each extremity; when put on the stretch they exert a considerable and continuous force which may be available for the above purpose. Bauer's wire splints deserve favourable notice for lightness and cleanliness.

Mr. Hamilton has very carefully gone into the evidence in favour of bony union of simple intra-capsular fracture of the femur, and expresses himself against its occurrence. As has been done by Robert Smith before him, he resolves the supposed cases into mistakes of diagnosis at the time of injury, into impacted fractures, and into chronic rheumatic arthritis.

Fracture of Patella.—Le Gros Clarke suggests a splint with a circular or oval aperture in the centre, to correspond with the patella. Sanborn[a] applies a broad strap of adhesive plaster from the top of the thigh down to the middle of the leg, leaving at the knee a free loop; bandages are rolled over the entire limb, omitting the knee; a small tourniquet pad is placed above the upper fragment, and a turnstick inserted in the loop and twisted until the fragments come in contact. The only deficiency in the description of this plan, as given by Hamilton, consists in there being no means described for preventing the turnstick from untwisting, as we can scarcely suppose the adhesiveness of the plaster to suffice for this purpose; this mode might be superadded to the starched case; with the latter however, alone, admirable results may be secured.

Mr. Tufnell[b] details a most interesting case of fracture of both patellæ in the same individual; slipping while going up stairs she fractured one patella by muscular action, and falling in consequence, she struck the other against the steps and fractured it also.

Hooks for Fractured Patella, and the Spike for Oblique Fracture of the Tibia, which owe their origin to the ingenuity of Malgaigne, cannot be classed among improvements in surgery, and are only mentioned for the purpose of showing that the complete neglect which they have sustained at the hands of British and Irish surgeons has not been from ignorance of their existence, but from a well-founded dislike to such retrograde mechanisms.

[a] Mr. Hamilton, Op. cit. [b] Dublin Medical Press.

The swinging cradles of Luke, Salter, and Gibb are real improvements conducive to the safety and comfort of the patient, and have come into general use in one form or other.

Fracture of the Radius.—The ingenuity of surgeons seems well nigh exhausted as regards this fracture; or perhaps the labours of Colles, Velpeau, R. Smith, and a host of others have so clearly elicited the anatomy of the fracture and the principles of its treatment that there is less room for perverse ingenuity. Mr. Gordon, of Belfast, has lately put forward a splint, the merit of which consists in using a wooden pad to fill up the concavity of the radius which ought to exist at the seat of fracture. In the last number of this journal a review of this appeared. The method is an ingenious modification of what is known at the Meath Hospital as Crampton's or Smyly's method. It remains to be seen if the substitution of a wooden for a soft pad is an improvement—if the splint is long enough to give support to the hand, and prevent displacement. On the latter point there is at least a suspicion of well-founded misgiving.

For patients of advanced years Nelaton's method by two splints, a short anterior and long pistol-shaped dorsal splint seems the favourite. For the majority of cases, one anterior splint, reaching from the elbow to the flexures of the fingers, and sloped off to correspond with them, is sufficient, provided the pad at the wrist be made and kept high enough to act as a fulcrum, and press against the displaced bone at the seat of fracture. If, for the first 10 days, the elbow be kept immovable, and the height o 1the pad from time to time renewed as it becomes flattened, complete reduction of the displacement will be obtained and preserved until union commences. A light, moulded, splint of Spark's leather may then be applied for a fortnight longer; after which some motion of the fingers may be encouraged, and the apparatus gradually removed. This plan enables the patient to regain fair use of the hand much sooner than Nelaton's does. In the latter the tendons are much compressed and matted, and six months generally elapse before pronation and supination are restored. Good arms can be turned out either way; but the Crampton method has the advantage of putting the arm into the position which is naturally the most easy, whereas Nelaton's is a cramped and unnatural position.

Statistics of Fracture.—Mr. Bryant[a] gives us some painstaking and useful tables upon compound fracture, deduced from 302 cases treated in Guy's Hospital during the last twenty years. Some of his results are as follows:

Compound fr. of thigh, ...	5·6	per ct., of which	64·7	per ct. proved fatal.	
„ leg, ...	63·9	„	„	38·3	„
„ arm, ...	11·5	„	„	11·4	„
„ fore-arm,	18·8	„	„	12·2	„

Of the whole number 31·7 per cent. proved fatal.

[a] Medico-Chirurgical Transactions, Vol. xliv.

Of the causes of death, it would appear that in cases subjected to amputation pyemia is twice as fatal as in those treated without amputation, and that exhaustion is a more common cause of death. Delirium tremens and tetanus were causes of death more frequently in those not operated on, than in those subjected to amputation.

In compound fracture of the thigh, as may be expected, the deaths hold a large per centage. The majority demand amputation; in fact none but uncomminuted fractures in the young and healthy, or the rare case in which the comminuted fragments can be at once removed, have otherwise a chance of recovery, or of a useful limb.

DISLOCATIONS.

Much that is new is not to be expected in either the etiology or treatment of dislocations. We find a determined effort to bring forward manipulation as a means of reduction, in preference to extension and counter-extension. The name of Dr. Reid, of New York, is prominently connected with a method which is briefly comprehended in the following direction, as applied to dislocation of the hip:—"Flex the leg upon the thigh; carry the thigh over the sound one, upwards over the pelvis as high as the umbilicus, then abduct and rotate it." A variety of means similar to these have been adopted from the earliest days. Even in Hippocrates a direction is given for cases that resist extension, to bend the limb at the joint and rotate; and in many writers since his time such directions are amplified and enforced. Dr. Markoe, of New York, adopts a similar method to Dr. Reid's, with the addition of slowly extending the limb, after it has been flexed and abducted. Mr. Cock and Mr. Birkett, among others, have followed Colombat's method, in which the patient stoops over a table, and the operator stands behind him. The principle, however, is the same in both—namely, to use the shaft of the femur as a lever, and so act upon the muscles which retain its head in its abnormal position with irresistible force. Much of the modern ease in reduction of dislocations is, however, due to chloroform.

PLASTIC SURGERY.

Cleft Palate.—The preceding *decade* witnessed the rise of Messrs. Fergusson and Mason Warren's improvements in operations for cleft palate. The last 10 years have seen their suggestions carried out, and, perhaps, in some degree improved. For the division of the muscles which act upon the soft palate Mr. George Pollock has suggested a knife, slightly bent upon the flat, and with a double edge; with this he cuts the levator palati from before backwards; and although the incision is necessarily rather larger than Mr. Fergusson's, the surgeon has the advantage of seeing exactly where he is cutting, and runs no appreciable danger of wounding the carotid. Mr. Fergusson's rectangular knife has been

altered by making it probe-pointed, so as to avoid the above-mentioned risk, and to prevent the point from hanging in the muscles of the pharynx, as it was found liable to do during the spasmodic efforts of the patient at deglutition.[a]

Mr. P. C. Smyly has suggested and practised the division of the levator and tensor palati muscles, by means of a small sickle-shaped knife introduced through the nostril. As soon as the blade is passed back through the posterior nares, the operator turns the cutting edge downwards; he then places the tip of the fore finger of the disengaged hand against the hamular process, and drawing the knife forward, severs all the muscular structures which intervene between his finger and the edge of the knife; dissection will show that this incision will implicate the levator and tensor palati muscles.

Mr. L'Estrange, long ago suggested that much assistance could be obtained, in all stages of the operation, by passing a thread through the point of the divided uvula at each side, and using it as a forceps to hold and draw upon the velum, so as to make it tense for the paring knife, or for the insertion of the sutures. I have borne testimony to the value of this suggestion, and Mr. Pollock has since adopted it.

In the separation of the muco-fibrous covering from the bony vault much facility and rapidity of execution can now be attained by introducing the knife through the nostril, at the earlier steps of the operation, as suggested by Mr. P. C. Smyly. The length of the operation is much diminished, as the operator can see what he is about, and can work with more freedom and certainty. There has been some correspondence lately between Langenbeck and Mr. Hulke[b] on the subject of a claim which the former makes to priority in detaching the periosteum along with the mucous coverings of the bony vault. No doubt whatever Herr Langenbeck makes this claim in good faith; but there is also no doubt that Mr. George Pollock, of St. George's Hospital, detached the muco-fibrous covering of the palate with chisel-edged knives, in July, 1855. I assisted at the operation—having gone over to London for the purpose. And in the latter part of the same year I repeated the manœuvre on another patient in the Meath Hospital. Mr. Pollock and I discussed the question of danger to the bones if deprived of their periosteum, and we came to the conclusion that the anastomosis of the vessels through the bones, from the periosteum of one side to that of the other, was so free in this situation that there was no danger of exfoliation; and the result justified the opinion. From the success of Mason Warren's operations I am inclined to think that he also detached periosteum along with mucous membrane as early as the year 1843. This,

[a] See a paper on Cleft Palate, by Mr. M. H. Collis, Dublin Quarterly Journal, Vol. xxi., p. 277.

[b] Medical Times and Gazette, August and November, 1861.

however, is but surmise. What I state about Mr. Pollock is fact—*me ipso teste. For the insertion of sutures* much mechanical ingenuity has been wasted. Startin's tubular needle is the only improvement which need be noticed. I must say that I personally prefer Liston's needles to any other method of inserting sutures. With three of these differing in curve from each other, any man who chooses to educate his hands, can pass sutures better than with any other mechanical appliance. In fact, there need be no difficulty in planting a suture anywnere within view, and many a one I have inserted where I could only see the point of entrance.

Vesico-vaginal Fistula.—Upon the kindred subject of vaginal fistula there is good reason for congratulation. The introduction of the silver wire suture by Marion Sims, has enabled us to grapple successfully with what was one of the greatest opprobria of surgical art. It is not necessary to enumerate the host of ingenious plans which our transatlantic brethren delight in offering for our adoption. I believe we shall come in time to find that the majority of cases can be cured by simple vivifying of the edges, and close stitching with silver sutures, and that Marion Sims' metal bars, Bozeman's shield of lead, and other kindred appliances, will be of exceptional usefulness. I dare say my own favourite quilled suture of vulcanized India rubber will come into the same category, although it may seem to deserve a better fate, as having been the means of reviving the belief of our Dublin surgeons in the curability of the accident. In this branch of plastic surgery, we have no reason, in Dublin, to feel dissatisfied with the success of the past decade. There have been many operators, since my first case in the year 1855, and each has contributed his share of success, and has added to our practical experience of the various modes and positions of operating. Marion Sims' duck-billed speculum is of great, though not invariable, value. In some cases broad brass spatulæ will answer better, and in fact, most of my best cases were done with these. Mr. Hilliard of Glasgow, has made a quadrilateral dilating speculum, which expands the interior of the vagina to the utmost, and which has the advantage of being self-retaining. It is highly spoken of by Dr. J. B. Brown. Dr. Simpson of Edinburgh, has found iron wire to answer as well as silver, for the sutures. In my hands it has not done so, and the general feeling of the profession, both here and in London, is in favour of the more noble metal.[a]

Ruptured Perineum, &c.—Dr. J. B. Brown,[b] of London, has done much to perfect operations for the cure of ruptured perineum, vaginal cystocele and rectocele, and prolapse of the uterus. By a sufficiently extensive removal of the mucous membrane of the vagina, and by paring the ruptured edges he obtains a large extent of raw surface, and by the quilled suture these are kept in close apposition until union takes place; a free

[a] Lancet, March, 1858.

[b] Surgical Diseases of Women.

division of the sphincter being added for the purpose of paralysing its action. The form and extent of the raw surface which he makes depend on the amount of laceration, and the seat and severity of the prolapse. The division of the sphincter is only necessary for ruptured perineum. In few words, the principle of his operation consists in obtaining, not so much a closure of the orifice of the vulva, as a narrowing of the vagina, and attention to this point explains the success, and the superiority of his proceeding over those of others.

Hare Lip.—Allan Duke, of Chichester, has revived the use of fine interrupted ligatures on the mucous surface, and there has been an attempt to revert to the older plan of quilled suture, which was the rule before the twisted suture was copied from the tailors. The deformity which remains after the best planned operation for hare lip, consists in the lip being both too thin, and too shallow at the point of union; this results from a gradual thinning of the cicatrix, and can only be obviated by making the lip, if possible, a little too thick and too deep at the time of operating. This may be effected by making the incision more curved than it usually is. The gap corresponds to, what ought to be in most faces, a curved and raised line; but the ordinary straight incision, by which the edges are vivified, necessarily leaves a straight cicatrix, and, generally, a depression where an elevation ought to be. This deformity might be remedied by hollowing out the edges with a narrow bladed knife, as they are being vivified, and the lip might be thickened by using the quilled suture.

It is a matter of surprise to find so intelligent an observer as Mr. Spencer Wells, putting forward, as his opinion, that simple hare lip is merely non-union of the median labial fissure;[a] the situation of the cleft is always to one side of the mesial line, and corresponds to one, or both, of the ridges which run from the nose to the free border of the lip.

A variety of methods have been proposed to increase the depth of the lip, and prevent the little tuck up, which almost invariably is observed at the point of the cicatrix. Malgaigne carries his incision down, at each side, towards, but not through, the free border of the lip, he then cuts off two-thirds of the little slips and turns down the remaining third of each, so as to form a projecting nipple along the free border. This can be trimmed afterwards if too exuberant. Langenbeck and Coste, of Marseilles, pare one side in the same manner as Malgaigne, and the other they simply pare, rounding off the free angle, so as to get a raw surface along the border of the lip, to which to apply the lower third of the slip of the opposite side, thus making the cicatrix vertical through the upper two-thirds, and oblique along the lower third of its extent. Sedillot used a similar manœuvre to that of Malgaigne, and I remember to have heard Mr. Smith, of the Leeds Infirmary, describe a similar proceeding as one which he had been in the habit of following for years.

[a] Surgical Dictionary, 8th Edition.

Most surgeons will now follow the conservative practice of Gensoul, in retaining the central bone in cases of double hare lip and fissured alveoli and palate; except in cases of extraordinary deformity it may be pushed back into its place with advantage. Mr. Butcher[a] has figured some bone nippers by which the necessary partial incisions into its pedicle can be effected.

In separating the lip from the alveolar process, Soupert [Nouveau procédé pour le Bec de liévre, Brussels, 1858],[b] is careful to preserve the labial frenum, as he imagines that in after life the lip loses much of its characteristic expression if the frenum be removed. The labial frenum proper should never be divided, but the adhesion of the outer border of the fissure to the alveolar mucous membrane should always be divided. Care should also be taken not to separate the fold of mucous membrane above its proper line of reflection from the gum to the lip, as a fistulous opening sometimes remains upwards to the nares, if this be done. Too extensive severing of these natural reflections of the membrane leads to the lip becoming too shallow at the very point where increased depth is required.

Some of Mr. Bryant's clinical notes on this subject are interesting. Of 47 cases, 30 occurred in boys, but 17 in girls, thus corroborating the general notion that the malformatiou is commoner in male than in female children.

21 were simple hare lip.
3 complicated with fissured gum.
2 „ „ hard palate.
17 „ „ soft do., and
2 were double.
44 were operated on.
3 within a fortnight after birth, of whom one died.
7 were four or five weeks old; in two of whom the line of union gave way, but subsequently closed by granulation.
6 were operated on between 6th and 7th week successfully.
10 between 3rd and 6th month, with one failure.
5 „ 6th and 12th, successfully.
13 after 1st year, „

These results are in favour of delaying the operation until about the sixth month. Earlier operations may succeed even in a majority of cases, but one or two failures from premature interference will more than justify the delay.

Mr. Butcher is in favour of early operation, justly considering that the success of this, as of many other operations, depends much on the care and skill of the surgeon, and on the health rather than on the age of the patient.

[a] Dublin Quarterly Journal, 29.
[b] Surgical Dictionary, p. 869, 8th Edition.

Deformities resulting from Burns.—Mr. Rynd[a] proposed and executed an operation for the remedy of these deformities, to which his name deserves to be attached. It consisted first, in making his incision beyond the margin of the injured skin, in parts that were perfectly sound; and secondly, in dissecting up along with the flap every portion of underlying fascia, or even muscle, which had been included in the original injury and which had undergone the contractile change which results from it. To Rynd's operation Butcher[b] has added a subcutaneous scoring of the flap and division of such bands as threw it into ridges. Mr. Barton[c] recommends that simple extension should first be tried, then subcutaneous section of unyielding bands, and if these were insufficient, the severer operation of dissecting up the flaps.

TRACHEOTOMY.

For facilitating the opening of the trachea we have various forms of grooved hook proposed. Spencer Wells suggests the cassigna, or hook grooved on its convexity, Lawford on the concavity, and Churchill on the side. Marshall Hall suggested a common sharp pointed pair of scissors with which, in emergencies, to divide the integument, and by a plunge to enter the trachea, then by divaricating the blades, to allow the entrance of air.

In the *Journal de Medicine et Chirurgie* for March, 1856, we have an account of 57 cures through tracheotomy, in 264 *hopeless* cases of croup, by Guersent. Unfortunately in this country we are not able to produce anything like so favourable statistics. Whether the disease is different in type, or that they operate earlier in France, certain it is that the most successful operators here can produce few, if any, genuine recoveries in the later stages of croup by the operation of tracheotomy; and one can see good reason why it should be so, if the formation of the false membrane be from below upward, and not from above downwards; so that the lungs are hopelessly inflamed and blocked up before the trachea is affected.

Fock also states that he saved 10 cases out of 24 in the last stages of the disease.[d]

ORTHOPEDIC SURGERY.

In *Orthopedic Surgery* we have a reaction against indiscriminate tenotomy. Mr. Adams[e] has shown that tendons contained in synovial

[a] Dublin Quarterly Journal, Vol. xxii.
[b] Dublin Quarterly Journal, Vol. xxxiii.
[c] Dublin Quarterly Journal, Vol. xxxii.
[d] Deutsche Klinik, 1859.
[e] Adams on the Reparative Process in Human Tendons.

sheaths do not unite when divided, but that they form adhesions to the sides of the sheath, and that the interval between their ends is permanent; thus a considerable loss of power results. This statement, as regards human tendons, coincides with the previous experience of M. Bouvier on the tendons of animals, and is supported by Mr. Barwell,[a] who goes so far as to say that such muscles as the tibialis posticus, and flexor longus digitorum, might as well be struck by sudden and irremediable paralysis, as be subjected to the knife of the tenotomist; and that the tibialis anticus is only a little better circumstanced. The peronei also are similarly situated.

I have seen two very simple and efficient forms of splint for varus, one a straight piece of flexible tin, covered with chamois leather, an inch and quarter, or so, wide, and long enough to wind round the foot and extend along the outside of the leg, well above the knee. This acts as an external ligament or set of muscles, and when secured by a bandage it can be bent to any required position, which it will retain, and thus exercise any required amount of force, and in the direction that seems most suitable to the surgeon. This simple splint was devised by Mr. Wharton, of the Meath Hospital, and has been of great service in several cases in which I have used it. Another very similar idea is embodied in a straight splint of Mr. Adams,[b] which is made of tinned iron, and runs down the outside of the leg from the knee, below the foot; it is slightly hollowed to the shape of the leg, the upper end is firmly bandaged to the knee and calf, and by this means a lever power is obtained, so that by continuing the bandage down the limb, great force can be brought to bear upon the inverted foot. There is not, however, the same power to bring down the heel which can be exercised by Mr. Wharton's splint, or by Mr. Colles' simple hoop-iron splint, described in the first number of the *Dublin Hospital Reports*, but it is of great service in the later stages of cure.

Of strange operations, Mayer's for genu valgum is the strangest; he cut out a wedge-shaped piece from the inner side of each tibia, below the tuberosity, and treating his wound as a compound fracture, succeeded in obtaining for his patient a pair of straight legs! *Ce jeu ne vaut pas la chandelle.*[c]

MINOR SURGERY, INSTRUMENTS, &c.

For Removing Carious Bone.—Among hundreds of implements few surpass the *osteotrite* of Mr. Marshall, and the *double or forceps-gouge* of Coxeter. The former is an enlarged edition of the common mill-head used by dentists; it is most efficient for clearing away all that is diseased in

[a] Medico-Chirurgical Society Reports, in British Medical Journal, Dec. 7, 1861.
[b] Medical Times and Gazette, July, 1857.
[c] Heyfelder's Memoirs on Resections.

irregular cavities, while the gouge forceps is most efficient in removing projecting irregularities.

The *écraseur* invented by Chassaignac was, at first, to supersede all cutting instruments; and its admirers went so far as to invent an *osteoclast* to enable the surgeon to perform a bloodless amputation. But this first enthusiasm has died away, and it now remains a useful instrument for the removal of hemorrhoids or any small pedunculated tumours, especially those arising from mucous surfaces, with a caution against too free removal in the case of piles, as mechanical stricture of the anus has been the result in some cases.

The *drainage tubes* of the same author should also be mentioned as a useful modification of a very old method of treating chronic abscess.

The *serres-fines* of Vidal are not as much used as they might be for retaining the margins of wounds in contact. Probably the general introduction of metal sutures, for which we are indebted to Marion Sims, Simpson, and others, has somewhat superseded their use.

The *Acupressure Needles.*—With Professor Simpson's we are all tolerably familiar. They too would seem to have been accorded at first a too extensive applicability, and to have been used in cases where, to say the least, they were not wanted. It remains to be seen if they are destined to take any permanent place in the surgeon's armamentarium.

For *paracentesis thoracis*, Mr. C. R. Thompson, of Westerham,[a] has devised an excellent canula and trochar, by which the entrance of air into the pleura is rendered impossible. The canula is four inches long; near its middle a short silver tube of the same calibre is let in at right angles; to this side piece, a foot or so of India rubber tubing is to be attached, the end of which is to lie in a vessel of water, with which the tube is to be filled by the simple process of giving it a squeeze. The trochar, which accurately fits the canula, can only be withdrawn so far as to open the communication with the side tube. It will be seen that with such an instrument air cannot get into the pleura.

Of *Tourniquets* we have ample supply. Signoroni's clamp tourniquet, Salt's plain band of steel, Key's expanding tourniquet are all good in their way. For field purposes Signoroni's, with Archimedean screw at the hinge, is the most rapid and powerful. It can be applied, and the limb amputated in half the time that Petit's would take to adjust.

Bandages.—MM. Mayor and Rigal[b] have proposed to substitute handkerchiefs and napkins for roller bandages. Many of their adaptations are extremely neat. The old double handkerchief for fractured clavicle is an example of the system. Others for the groin, for supporting the breast, and as suspensories for the testicle are simple and satisfactory; but as usual the idea is run to distraction by its authors.

[a] Medical Times and Gazette, March, 1858.

[b] Goffres on Bandaging. 1854.

Hypodermic Injection.—The direct application of remedies by this means is a valuable addition to our resources, especially in neuralgias, and possibly in tetanus. The credit of originating this method is due to the late Mr. Rynd, who adopted it in the year 1844, and published an account of it in the *Medical Press* of the year 1845.[a] His instrument,[b] which is expensive, never came into general use, and Mr. Wood has obtained the credit of popularising the method. Mr. Rynd used a solution of morphia in creosote, in the proportion of 10 grains to a drachm, injecting from six to twelve drops, for sciatica along the sheath of the nerve, with excellent effect. Excellent results are obtained by superficial scarifications over the terminal branches of the affected nerves, and by painting the scratches with a solution of morphia in creosote and chloroform. This has been used by Dr. Jameson, of Mercer's Hospital, for many years.

As a Styptic, the perchloride of iron has come into favour; and its solution has been introduced, with some temporary benefit, into the sloughing and bleeding masses of fungating cancers. Of its use in aneurism mention has been elsewhere made.

For Local Anesthesia, ice has also been used, and also as a *styptic*. More was, perhaps, expected from it in both capacities by Dr. Arnott; but there is no doubt, on the one hand, that the steady application of cold is of great service in retarding the growth of the more acute tumours, and on the other, that its value as an anesthetic for operative purposes is limited to cases of minor importance, such as operations for onyxis or onychia.

TRANSACTIONS OF THE ASSOCIATION OF THE FELLOWS AND LICENTIATES OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.[c]

SESSION 1861–62.

Third Meeting, January 15th, 1862.

(*Open to Visitors.*)

Dr. Corrigan, President, in the Chair.

Dr. Jonathan Osborne read a paper on the mode of using a heated thermometer, which he proposed to call *The Animal-heat Thermometer, for the purpose of measuring the cooling power of the air on the human body.*[d]

[a] Dublin Medical Press, March 12, 1845.

[b] Figured in our August Number, 1861.

[c] These reports are supplied by Dr. B. G. Guinness, Secretary to the Association.

[d] See a paper on this subject at page 273.

Dr. Beatty read a paper

On so-called Hydatids of the Uterus.—He considered that the name was incorrect—that the disease was one, not of the uterus, but of the ovum, and of very rare occurrence. Notwithstanding many eminent opinions to the contrary, he was himself satisfied that the true hydatid is never found in the virgin uterus, but was solely due to impregnation. He considered it an enlarged and dropsical condition of the villi of the shaggy chorion; in fact, a vesicular degeneration of the ovum. He stated that the patient so suffering was peculiarly prone to hemorrhagic discharges from the uterus—indeed, that this was an invariable accompaniment of the disease; often reducing the system to the lowest ebb, and a most dangerous affection.

Dr. James F. Duncan read the following paper:—

Case of Obstructive Disease of the Heart, probably resulting from Chronic Pneumonia, and inducing Apoplexy.—Edward Fetherston, aged 38, a carpenter, a man of sober and well-conducted habits, had uniformly enjoyed excellent health up to the commencement of his present illness. With the exception of an attack of sciatica three years previously, he never had any other form of rheumatism, nor any affection referrible to the heart.

On the afternoon of Monday, February 10, 1862, when engaged in his ordinary work, he was suddenly seized with a queer sensation all over him, affecting the right side of his face in particular. His right hand dropped powerless at his side, and his speech became indistinct. Consciousness remained unaffected, and he did not fall.

He was removed to the Adelaide Hospital on the 11th, and, on examining him next day, the symptoms he presented were as follow:—His complexion was clear but pale, and almost anemic, giving the observer the idea that he had lived temperately, but was suffering from some form of hemorrhage. His speech was almost inarticulate from indistinctness, but intelligence and memory seemed unimpaired. There was imperfect paralysis on the right side; he could move his hand and leg, and grasp with his fingers, but with less power than on the left side. The mouth was slightly distorted, and the tongue divaricated sensibly to the right. There were no symptoms of fever; his skin was cool; his tongue moist, and tolerably clean; and the general functions unaffected. The urine was of ordinary amount: 1020 in specific gravity, and not albuminous.

Though I had no special reason, from the man's appearance or history, to suspect anything wrong with the heart, I proceeded to examine it, and was at once struck with the extreme irregularity of its motions and sounds. There was no unnatural dulness on percussion over the precordial space, but the impulse was remarkably weak: the sounds were feeble and confused. Over the greater extent of the heart's surface no murmur could

be detected, but the first sound had lost its natural character; it was shorter and more clicky than usual; and on the back of the chest, corresponding to about the inferior angle of the left scapula, where both sounds could be distinctly heard, they bore a close resemblance to that of the fetal heart in utero. An obscure and badly developed systolic bruit was audible over one small spot near the apex of the left ventricle, about an inch and a half below the mamma, and to the left. The radial pulse corresponded to the condition of the heart; it was quick, faint, and irregular, giving the impression that the calibre of the vessel was not adequately filled.

No dyspnea was observable, neither was the respiration accelerated, and the patient complained of no cough; but a careful examination of his chest discovered double pneumonia occupying the lower portion of each lung, indicated by dulness on percussion, obstructed respiration, and fine crepitus. The transmission of the cardiac sounds to the back, pointed to the same state as the cause of the phenomenon. On close inquiry the man admitted that he had a cough, and oppression of his breathing for about three weeks.

I think an interesting question arises in connexion with the symptoms just detailed—how far they stand related to each other, and what is the precise nature of that relation? Are the three sets of symptoms—namely, those referrible to the nervous system, to the heart, and to the lungs—altogether distinct from each other, and independent, or is one in any sense the cause of the other, and, if so, what is the chain of causation?

I confess that when I first commenced my examination of the patient's heart, knowing the intimate and frequent connexion subsisting between morbid states of the brain and of the great central organ of circulation, I was quite prepared to discover evidences of some disease existing there, although unsuspected by the patient himself. But I was certainly taken by surprise when I discovered, instead of the signs of regurgitation through the mitral and aortic orifices—which I believe to be the most common link in this chain—evidences which pointed rather to some obstruction to the current of the circulation. Hastily adopting, on the moment, the idea that this obstruction depended upon narrowing of the mitral orifice, I naturally inferred that the patient must have been suffering for a long period—years, perhaps—from cardiac disease; because such a degree of contraction as was here indicated was not likely to be produced, except after a long interval of suffering. But on questioning the patient, to ascertain the truth of this conjecture, neither his past history, nor the physical signs which he presented, corresponded with this hypothesis. He had never had palpitation, dyspnea, or pain; neither had he hemoptysis, enlargement of the right chambers of the organ, pulmonary congestion, nor any swelling of the great veins, all of which usually accompany narrowing of the mitral opening.

Rejecting, then, for these reasons, the idea that the attack of apoplexy

depended upon a chronic lesion of the heart, and that the pulmonary inflammation was a mere coincidence, I was led to look upon the case in a different point of view, and to regard the pneumonic seizure as the starting point of the entire series of the morbid actions; giving rise, in the first instance, to changes in the condition of the heart sufficient to interfere with the proper performance of its functions, and to the fit of apoplexy as the remote consequence of these changes. The mode in which these effects have been produced was, probably, the formation of a fibrinous coagulum within the left ventricle, interfering with the free action of the valves, and with the current of the blood in its passage through the chamber. After the formation of this coagulum there was, possibly, the detachment of some loosened portion, in the manner described by Dr. Kirkes, which, carried into the general circulation, became entangled in one of the cerebral vessels, and, by its mechanical interference with the nutrition and functions of the part, gave rise to the symptoms of apoplexy.

To this view of the case several objections will at once suggest themselves. In the first place, it will be considered extremely improbable that coagulation of the blood should occur in a healthy young man labouring under pneumonia; for, if it did, the occurrence, instead of being a rare phenomenon, which it undoubtedly is, should be one of the most common in the course of practice; and, secondly, the cerebral lesions described by Dr. Kirkes have been hitherto found only in connexion with endocarditis or warty growths upon the valves; whereas, in this instance, the physical signs have been different from those accompanying either of those pathological conditions.

In reference to the first of these objections, it is to be remarked that the attack of pneumonia under which the patient laboured, must have been of a low and chronic form. For three weeks, according to his own account, he had a slight cough, and a sense of oppression in his chest, yet it neither hurried his respiration nor produced any inconvenience sufficient to induce him to look for medical assistance; and when he came under observation in the hospital, though the lower portion of both lungs, posteriorly, was dull on percussion, yet the fineness of the crepitus, and the absence of bronchial respiration, showed that the inflammation was still in its first stage.

The chronic form which the inflammation assumed in Fetherstone's case, and which, doubtless, depended upon some peculiar condition of the constitution, appears to me to furnish some explanation of the phenomenon in question—assuming, for the moment, that the hypothesis we have laid down is the correct one. Two circumstances combine to favour the formation of a clot in a part so well fitted to receive it as the interior of the left ventricle: the one is the hyperinosed condition of the blood in the inflammatory state; and the other is the retardation of the current of the circulation, owing to the pulmonary obstruction and the impaired energy of the vital force.

That the blood does occasionally undergo coagulation during life is a fact too well established in pathology to admit of question. It is in the old and debilitated, shortly before death, that it has usually been observed, in whom the waning powers of life are insufficient to maintain the circulation in a way to prevent this effect taking place. I have met with more than one instance of late, which I had the opportunity of verifying by *post mortem* examination, and which, during life, presented physical signs bearing a close resemblance to those presented by the case under consideration. These were: weakness and irregularity in the heart's impulse, diminution in the volume of the pulse, feebleness in the first sound, and absence of any bruit.

With regard to the other objection, it may be said that the attention of practitioners has been too recently directed to this form of accident to enable us to say that it is only in the case of organised growths, detached from the internal membrane of the heart, that apoplexy can result. The general principle involved in Dr. Kirkes' cases applies to all cases of plugging of cerebral arteries, whatever be the nature of the obstructing medium; and while a portion of coagulated fibrin may be less likely to lead to permanent disorganisation of the brain substance than warty growths of a denser structure, the immediate effects must be nearly the same.

Of course, in speaking of the case to which I have called attention, I am at present only adducing this idea as a probable conjecture; for the opportunity of verifying the truth or falsehood of the opinion has as yet happily been withheld. Still, the continuance of the patient's life, or the removal of the paralytic symptoms, does not necessarily invalidate the theory put forward. Even Dr. Kirkes admits that the obstructions of which he treated were, possibly, not in all cases absolutely fatal, but that the recuperative or adaptive powers of nature may, perhaps, in some instances be capable either of absorbing the obstruction, or, by dilating the vessel, allow a sufficient quantity of the vital fluid to pass to the remote side of the vessel, and so provide for the future nutrition of the parts beyond.

The treatment I was led to adopt was principally directed to relieve the pulmonary inflammation, but was equally calculated to promote the activity of the absorbents generally. It did not differ materially from that usually employed for such a purpose. In addition to the local detraction of blood by leeches and cupping, there were used diffusible stimulants, and pills containing moderate doses of the blue mass, in combination with quinine and dried soda. The progress of the case has been hitherto satisfactory; the paralytic symptoms are decidedly relieved; he speaks nearly as distinctly as in health; the appearance of the face is natural; and the tongue is protruded straight. His chest is clearing up; the dulness posteriorly is diminishing; the heart is no longer audible below the left angle of the

scapula, or, if at all, very indistinctly, and the crepitus is gone, while air enters the pulmonary structure more freely. The condition of the organs of circulation is as yet but little changed. The impulse, though stronger, is weak; the beats irregular in number and in force; the sounds present somewhat the same character as they did at first. They are rather more developed, as if the heart's action were less interfered with. The systolic bruit is a little more distinct and prolonged. The patient's mouth is now sore; his strength has been sustained by wine and nourishment; and to-day he has been put upon a mixture of infusion of polygala with hydriodate and carbonate of potash.[a]

Before concluding, allow me to add a brief note of a case which I met with last year, and which appeared at the time to have been an instance of embolic detachment, although we were unable to satisfy our curiosity by a *post mortem* examination.

Julia Dunn, aged 19, a dressmaker, was admitted into the Adelaide Hospital, March 12, 1861. For two years previously she had been subject to palpitation of the heart, aggravated occasionally by the occurrence of general dropsy. She never suffered from rheumatic fever, and did not know to what the affection of the heart is to be attributed. The symptoms which she presented on admission were:—Palpitation, cough, with a sense of constriction, but no dyspnea. There was slight œdema of both ankles, with constant pain in the right one, increased at night. She was liable to frequent attacks of epistaxis, and complained of a swelling of some description in the left hypochondrium. She was a remarkably silent girl, seemed depressed in spirits, and had an anemic, unhealthy aspect. A well-marked pulsation was observable above the sternum, whether venous or arterial was not certain, but a venous murmur was distinctly audible over the internal jugular. Percussion in the cardiac regions showed the existence of greatly increased dulness, as well as at the base of both lungs posteriorly. Over the base of the heart a bruit was heard, with the second sound; at the apex a murmur attended both sounds.

The next day the sounds of the heart did not present the same character as they did the day before, from which circumstance we were led to predicate the existence of endocarditis in a slow but progressive form.

The day after (the 14th) the murmur was louder, and the pulsation over the sternum communicated a thrill to the finger placed over it. On the 17th the gums were tender, and a mercurial fetor was perceptible on the mouth. The pulsation over the sternum was less. She felt and looked better; some colour was returning to her cheek; her cough was gone, as

[a] The patient continued to improve, but left the hospital on February 28th. At that time the changes in the condition of the heart indicated a material removal of the supposed mechanical obstruction to the current of the blood. The pulse became fuller, firmer, and less irregular; the impulse stronger; and the bellows murmur over the apex of the left ventricle more developed.

well as the pain in the right ankle. On the 18th there was still farther improvement; and on the 19th, at nine o'clock a.m., she told the nurse that she had had a very good night's sleep, and that she felt better than she had done since her admission. Shortly afterwards, when making my visit, I found her crying hysterically, and complaining of a pain in her head and in her stomach. I was led, by her appearance and manner, to think that she had been frightened by another patient, who was moaning in the ward. At 11 o'clock she had a kind of fit, working convulsively, so as to render restraint necessary. Every two or three seconds she would suddenly move her face forward, open her mouth to its widest extent, and spasmodically thrust out her tongue, accompanying the act by a prolonged pendulous moan. In tossing her arms about she would bring her hands to her head, and draw them forcibly across her face, uttering complaints about her head, as if suffering from pain. The violence of the fit subsided soon after the administration of an enema, when she remained quiet, but moaning, and rubbing her face with her hands. She appeared only partially conscious; for although when spoken to loudly she could still indicate her head, and mutter something about pain, she would immediately relapse into a lethargic condition—her eyes half closed, the pupils contracted to their smallest possible size, and perfectly unaffected by light. The pulse was peculiar, presenting a double impulse, followed by a single one, which was succeeded by a prolonged interval. There were occasionally complete intermissions, and again it would be regular, but very weak.

At 12 o'clock she was still able to point to her head, and mention something about pain; but this was the last time she spoke. Her breathing soon after became stertorous; at a quarter before two o'clock the same day her pupils were observed to become suddenly dilated to their fullest extent, and at the same instant the heart's action finally ceased.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.[a]

TWENTY-FOURTH ANNUAL SESSION—1861-62.

DR. BANKS, President.

Intra-Capsular Fracture of the neck of the Femur.—Dr. EDWARD HAMILTON said that the specimen before the society was one of ordinary fracture of the neck of the thigh bone.

It was taken from a female aged, at least, eighty years. She was a charwoman by occupation, and was admitted into Steevens' Hospital in consequence of the effects of a fall. She slipped on a flag in a kitchen,

[a] These reports are furnished by Dr. R. W. Smith, Secretary to the Society.

and fell with considerable violence to the ground, and was unable to raise herself. He saw her the morning after her admission, and she presented all the features, or most of the features, of intra-capsular fracture of the neck of the femur, tolerably well marked. The limb was half an inch short, and she was unable to raise her heel without the manœuvre so frequently adopted in such cases, of drawing it along the bed. He could not discover the least crepitus; the *nimia diligentia* was avoided, as they were not anxious to disturb her unnecessarily, and thinking that the diagnosis could be satisfactorily made without it. She was placed on an inclined plane of pillows, and things continued in the same state for some days. One of the most remarkable features about the case, was the small amount of suffering; in fact, she would not believe that the limb was broken; she said she was merely bruised, and that some of the sinews were started. In about the seventh day after her admission to the hospital, he observed a marked change in her appearance. It was evident that the flame of irritative fever had been lighted; her skin was hot; her pulse was fluttering, weak, and intermittent; but, notwithstanding all these constitutional disturbances, she complained of no pain in the region of the hip. She sank, however, in a day or two afterwards. The *post mortem* examination showed that their diagnosis had been tolerably correct; but, he should say, they were, to a certain extent shaken in their diagnosis, when they found her complaining of so little pain. There was a slight contusion on the hip, beneath which there was a small quantity of extravasated blood; the capsular ligament of the hip joint was uninjured, but swollen, as it contained fluid. On opening it a quantity of purulent serum escaped. There was no vascularity, and but little attempt at repair. The fracture seemed as if it had taken place after death. The clinical teaching of that case should impress on their minds what most of them knew very well—that there may be absence of crepitus in cases of fracture of the neck of the femur; secondly, that in persons of extreme age the suffering is very slight; and thirdly, that death arose from irritative fever.—*December* 14, 1861.

Fibrous tumours of the Uterus.—Dr. M'Clintock exhibited the uterus, with its appendages, and a part of the vagina, removed from a patient who died in the chronic ward of the Lying-in Hospital, some weeks before the expiration of his mastership of that institution. The specimen, by itself, as a piece of morbid anatomy, was one of considerable interest, and very instructive. It exhibited almost an epitome of the principal anatomical characters belonging to that common, but very important, disease—fibrous tumour of the uterus; and it presented the chief varieties, as to situation and structure, of this description of morbid growth. Tumours of this kind were described by Baillie under the name of *fleshy tubercle;* by Hooper they were called *cartilaginous tumours;* and by later

pathogolists they have been variously designated as *fibrous tumours; fibroids*, and lastly, by M. Paul Broca, *hysteroma.*

On the upper and left side of the uterus were two large sub-peritoneal tumours; and there were others, in different stages of growth and development, protruding from the exterior surface of the organ. These tumours might be termed gregarious, for they rarely occurred singly; as many as fifteen or twenty were sometimes found in the same case, and in this instance, there were certainly seven; one of those which protruded from the left side of the fundus of the uterus was, so far as shape went, a veritable polypus, but covered with peritoneum, instead of mucous membrane. It was attached to the uterus by a small, flat, ribbon-like neck, and had a very white dense structure.

This tumour was in the first stage towards calcareous transformation, a spontaneous process of cure, depending in a great measure on diminished vitality. Attention has lately been drawn to the transplantation of fibrous tumours from the uterus to other parts of pelvis, and the way in which this occurrence took place was satisfactorily explained in a paper written on the subject by Dr. Turner of Edinburgh.

The tumour, in the case before the society, might be regarded as in a most favourable state for such transplantation, in consequence of the length and smallness of its pedicle. So far for the sub-peritoneal tumours. Another situation for fibrous tumour was in the substance of the uterus, and when so placed the uterus became enlarged in size and developed in structure; whereas the sub-peritoneal tumour exercised but little influence on the growth of the uterus, and caused scarcely any annoyance. In the present instance an interstitial tumour has produced a very great augmentation in the bulk of the uterus, with great thickening of its walls. The third position of the fibrous tumour, was where it protruded from the uterus into the vagina, forming a fibrous polypus, or pediculated submucous fibrous tumour.

There was on the table a magnificent example of such a polypus. We now come to the clinical history of this specimen. The patient was unmarried, and had been suffering from continued hemorrhage for five months before her admittance into hospital. On examining the state of the uterus, this large polypus was found to exist, and the patient was admitted for operation. The next morning, having made a more minute investigation, Dr. M'C. discovered that the woman was thin, haggard-looking, and very much anemiated, and altogether in a very unpromising state for an operation. The uterus was evidently much enlarged, there was a large tumour above and to the left of the pubes. It was clearly not a case of simple uncomplicated polypus. On further examination per vaginam, they observed a watery fetid discharge. On consideration of these circumstances it was decided that the case was not a suitable one for operation. Dr. Marion Sims, of New York, was at this time in Dublin,

and a very frequent visitor of the hospital. Dr. M'C. showed him the case, and told him that he hesitated to remove the polypus. Dr. Sims entirely concurred with him as to the inexpediency of the operation, and added that in his own hospital, if the operation were to be undertaken, he would be apprehensive of a fatal pyemia succeeding to it. This decision was come to on a Wednesday morning; and on the Friday morning she got a rigor, followed by vomiting, abdominal pain, and collapse, and she died in ten hours. A careful *post mortem* examination was made. There were traces of incipient peritonitis, and a good deal of fluid in the lower belly. A rupture of a cyst in the right ovary was detected, and the fluid, still remaining in the cyst, was the same in appearance as that found extravasated in the peritoneal cavity. If any operation had been performed her death would, no doubt, have been attributed to it; so that it was fortunate they had abstained from interference. The cause of death was most interesting and important.—*January* 11, 1862.

Diabetes.—Dr. Moore said that the specimen which he was about to show was taken from a man who was admitted into Mercer's Hospital on the 14th of October last. The case was very closely watched, and was one of great interest. He would read the history of the case :—

Patrick Ryland, aged 43, a pensioner; had served 21 years in the 23rd Regiment, in many parts of the globe; and in 1858, after his return from India (where he had been laid up for three months with rheumatism) he was discharged. About the middle of March, 1861, he first felt cramps in his legs, and began to lose flesh. During the month of April he became more emaciated, his thirst immoderate, and his urine greatly increased in quantity. In June these symptoms were still more aggravated, and on the 12th of this month he was admitted into St. George's Hospital, under the care of Dr. Bence Jones. He came to Dublin in September, and was admitted into Mercer's Hospital on the 14th of October. On admission his symptoms were :—Extremely haggard, emaciated, anxious look; skin hot and dry; immoderate thirst; abnormally increased secretion of urine, of a pale straw colour. He complained of pain in his chest and down his limbs; of impaired vision, particularly the left eye; of extreme cutaneous sensibility, the slightest touch making him wince. The physical signs were :—Appreciable dulness under the right clavicle, and over both lungs posteriorly and inferiorly; feeble respiration, with a short, dry cough. His diet, on admission, consisted of one pound of bread, one pint of milk, and one egg; one pound of beefsteak, one quart of beef tea, one pint of milk in the evening; one quart of milk and lime-water during the 24 hours. The first 24 hours after his admission he passed 10 pints of urine. specific gravity 1046, having an acid reaction, and loaded with sugar, when tested with liquor potassæ. He was now allowed a pint of porter. The quantity, or specific gravity of the urine, did not materially vary till

the 18th, when, the patient having passed 13 pints in the previous 24 hours, with a specific gravity of 1040, Professor Haughton found the proportion of sugar present to be 7·98 grains to the pint—about 23½ ounces in the 24 hours. The specific gravity of the urine remained the same until the 28th, when it rose to 1050. On the 29th the patient passed 9 pints of urine, the specific gravity being 1043, and the proportion of sugar, according to Professor Haughton's calculation, was 7·00 grains to the pint. Things went on the same way for some time. The specific gravity of the urine was reduced to 1025. On the 11th of November his diet was changed, and he was allowed a considerable quantity of greens. On the 12th he only passed six pints of urine, the specific gravity being 1040. Although he was allowed to drink water *ad libitum*, it did not seem to affect the quantity of urine he passed. On the 13th seven pints of urine, with a specific gravity of 1040. His expectoration now became more copious, and was like treacle, and sweet to the taste. Nothing remarkable occurred until the 24th, when gargouillement became well marked under the right clavicle, and there was œdema of the extremities. On the 25th the specific gravity of the urine was 1030, and the quantity passed four pints. On the previous day it was 1040. On the 9th of December he passed five pints, and the specific gravity was 1046. There was evidence of the right lung breaking up. On the 10th he passed four pints; the specific gravity was 1016, and there was not any sugar. That was so staggering, that the patient, having been put sentry on his own urine, was much affected at being suspected of interfering with it. At this time he was suffering from pain in the side, and was unable to take a deep inspiration. On the 11th he passed four pints: specific gravity, 1030. On the 16th the specific gravity was again up to 1042, and Professor Haughton found that the sugar had fallen to 1·46 grains to the pint. On the 17th he passed three pints, and the specific gravity was 1017: no sugar. There was crepitus over the mammary region of the left side. On the 18th he passed six pints, and the specific gravity was 1036. On the 19th it was again up to 1042. On the 21st he passed six pints, and the specific gravity was 1006: no sugar. 22nd, it was 1032: sugar presented. 23rd, 1014: *no sugar*. From that day to the 3rd of January, when he died, there was *no* sugar. The *post mortem* examination disclosed no very striking appearances. The kidneys were slightly enlarged, as they are found in these cases. Hyperemia was extreme. They weighed three ounces over the average weight. The spleen was small, and there was nothing abnormal in the condition of the liver. The heart was comparatively small; it weighed over nine ounces. The right lung gave evidence of disease from an early stage, and was one mass of tubercle, which, in the upper and middle lobes, had run on to general breaking up. The left lung was studded with tubercles. He was induced to bring forward the case for various reasons, but more particularly on account of its intermitting character with regard to the disappearance

and reappearance of sugar. Cases have been brought forward in which the quantity of sugar gradually diminished before death, but he had not seen a case in which these intermissions occurred. The loss of vision, particularly of the left eye, did not pass unnoticed, Mr. Hildige having examined both eyes by means of oblique illumination, when not the slightest opacity of either lens or capsule could be detected. The retina of the left eye presented the following appearances:—The optic nerve was of a blood red colour at the point where the arteria centralis retina and vein enter it; near its circumference the colour was somewhat lighter, but it was marked here and there with spots of apoplectic exudation. Between the entrance of the optic nerve and the macula lutea, the retina presented a yellowish white appearance, resembling a parallelogram in shape. This extended about one-fourth of an inch above and below the optic nerve, following the course of the vessels, and ended abruptly in a somewhat serrated though well-defined margin. The macula lutea itself was but slightly changed in colour, and the remainder of the ground of the eye was normal; the field of vision was reduced to about one-eighth of its normal extent; so that when the eye was fixed on a certain point, and the hand moved round this point at a distance of about eight inches from it, it could not be discerned. Although the sight of the right eye was relatively unimpaired, still it was found, on examination, that the optic nerve of it also was much redder than natural, and feint greyish spots, resembling the first stage of sclerotico-choroiditis posterior, were observed here and there over the ground of the eye, particularly in the neighbourhood of the macula lutea, and following the course of the retinal vessels; however, the sight of it enabled the patient to read ordinary type without the aid of glasses.—*January* 11, 1862.

Phthisis—Tubercular abscess finding exit through the intercostal space.—Dr. Hayden said that the specimen he exhibited was taken from the body of an aged female who was admitted into the Mater Misericordiæ Hospital, on the 29th of November. She exhibited all the signs and symptoms of phthisis in an advanced stage, including, amongst the former, well marked gargouillement in the right infra-clavicular space. It was unnecessary to detail the symptoms. He observed, however, that there was more than ordinary cutaneous sensibility under the right clavicle; and she could scarcely endure the slightest contact of the stethoscope in this situation. Shortly afterwards, he remarked a tumour, measuring three inches by two, in the situation where the patient complained of tenderness; the tumour appeared when the patient coughed, and subsided immediately afterwards; and on manipulating it by pressing with the thumb between the third and fourth ribs, it did not appear as usual, when she coughed; it was emphysematous and resonant on percussion. A variety of means to allay the irritability were tried with-

out success; but repeated blistering was found to relieve her to a certain degree. She died on the evening of the 15th instant. He was disposed to regard the tumour as the result of the escape of tubercular abscess from the lung, perforating both layers of the pleura, and finding exit between the third and fourth ribs. He also supposed, from preceding observation, which it was very difficult to make, owing to the extreme emaciation of the patient, that the matter had found exit through one of the bronchial tubes. There was crepitus in the cavity when she coughed, and air passed freely through the opening from the lung into the abscess inflating it. A closer examination induced him to change this opinion, chiefly from the fact, that he was unable to discover the usual metallic phenomena. The result of the examination showed that his first impression was correct. Mr. Ryan, the resident assistant, removed from the thorax the integuments, subcutaneous tissue, and a portion of the second, third, fourth, and fifth ribs, with their corresponding cartilage, and the entire of the upper lobe of the lung. On raising the integuments with the muscles, he found his fingers in a large cavity, lined at the outer side by a dense membrane, as thick as leather. The ribs were denuded of periosteum, and carious on the surface, but there were grounds, he thought, for concluding that the abscess was not the result of caries commencing in the ribs. On closely examining the inner wall, he found a distinct communication between the portion of the lung which was attached to the ribs and the surface of the cavity, an aperture about the size of a goose quill. They might form a number of conjectures in this case, but, under all the circumstances, he was disposed to regard it as one of tubercular abscess, finding exit through the intercostal space, and so into the superficial structures. He remarked that the great elasticity of the walls of the cavity, and the existence of a second opening at its lower part might explain the absence of metallic phenomena by preventing the accumulation of liquid within it.—*January* 18, 1862.

Syphilitic Laryngitis.—Dr. E. Hamilton said, that the specimen which he was about to bring under the notice of the Society was taken from the body of a female 60 years of age. She was admitted into Steevens' Hospital suffering from what she called sore throat; but an examination proved that the disease was not confined to the throat. The history she gave was, that the disease had been of four years' standing; that she had repeatedly applied for relief to different hospitals in the city; and had taken medicine on her own responsibility, but never got completely well. She also stated that she had reason to believe that her husband had been unfaithful to her and had given her syphilis. She, however, never had any symptoms, with the exception of sore throat.

Her throat showed evidence of extensive ulceration, the result of secondary syphilis. Her health was broken down. The ordinary means

having failed to arrest the ulceration, the treatment by mercurial fumigations was adopted; under this she improved considerably, but still the laryngeal distress was very great. She usually had paroxysms at night; and during his visit in the morning he saw her in one of these. He considered whether he would not be justified in performing the operation of tracheotomy, in order to relieve her. However, he did not do so then, feeling quite satisfied that Mr. Symes was quite competent to act in case of emergency. Things went on the same way for some time. On the evening of the 14th November, she had a violent attack of dyspnea, and Mr. Symes, finding that there was no time to be lost, immediately performed the operation, after which she experienced a quiet night. He saw her the morning after the operation, when she presented all the symptoms of extreme depression. She improved from day to day and passed a considerable time without any laryngeal distress. She was able to sit up and eat solid food. The disease seemed to have passed off. About three weeks afterwards she got up during a cold damp night to close the door; and the next morning he found her suffering from all the symptoms of intense bronchitis, which resisted all efforts of treatment, and she at last sunk under it. All the symptoms of disease had passed away; and, but for this woman's own indiscretion, she might have left the hospital well. He might allude to another case, almost precisely similar, which occurred some time ago, and was under the care of Mr. Wilmot. He was called on to operate, and the man shortly afterwards was able to leave the hospital. Subsequently, whilst working at the King's-Bridge, the tube, which he was in the habit of putting in himself, came out, he endeavoured to insert it as usual, but, becoming confused, and losing his presence of mind, it was necessary to bring him to hospital, as he was in a state of complete asphyxia. The object in performing the operation should be to prevent rather than to relieve asphyxia.—*January* 25, 1862.

Disease of the Mitral and Semilunar Valves.—Dr. MacSwiney said, the danger of engagement of the heart, and the irreparable injury which may be inflicted upon that organ during the progress of a case of acute fibrous rheumatism are, unfortunately, but too well known. In the series of cases of this disease reported by Bury *(British and Foreign Medical and Chirurgical Review)*, 476 in number, more than half, or exactly 253, were complicated with heart affection of some kind; and the specimen which I bring before the Society to-day affords, in its pathological condition, abundant illustration of the same fact.

This heart was removed from the body of a man, aged 27 years, who was admitted into Jervis-street Hospital under my care, in the beginning of December last, and died in about three weeks after he came under my observation. He was a tailor by trade, and had been of intemperate habits.

I received the following history:—About four years ago, after a good deal of exposure to cold and wet, he was attacked with an acute illness, accompanied with pain and fever, in fact, with what we call rheumatic fever. He was taken to the Hardwicke Hospital, and was placed under the care of Dr. Banks. He remained there for about six weeks, and then left quite well, at least, not conscious of anything being wrong with him. After that he was subject, from time to time, to rheumatic pains, and had, occasionally, epistaxis. A brother of his had died of consumption about a year ago; but no other member of the family had had rheumatism.

Upon admission he presented the following appearances:—His aspect was pallid and delicate; his respiration was quick and somewhat difficult; under his eyelids was puffy; his face, generally, had a swollen look, and there was a slight hectic blush upon each cheek. His legs and feet were œdematous, more particularly about the ankles; and he had some general anasarca. He had cough which was distressing, frequent, loud, and he brought up a quantity of mucous and watery expectoration, which was now and then tinged with blood. His voice was laryngeal, and at intervals he had almost complete aphonia. His pulse was quick, full, and hard, but quite regular. There was no visible pulsation in the vessels of the neck. He had attacks of orthopnea, but was usually able to lie down, and when he did, the decubitus was on his back. His tongue was partially covered with a yellowish white coating; the urinary secretion was scanty, high-coloured, and occasionally giving a reddish deposit. His sleep was bad; his appetite moderately good.

The chest sounded clear in front; the dulness upon percussion, in the cardiac region was heard over an abnormal extent. Posteriorly there was dulness upon percussion at the base of both lungs, but this dulness was not very great—was not absolute. Auscultation in this region revealed a crepitating *rale* with large bubbles, such as one might expect to hear in œdema in the lower lobes of the lungs.

A systolic bruit was heard at the base of the scapula near the posterior angle, *and in that situation alone.* I was never able to hear the bruit in front, although I frequently looked for it; the heart's action was loud, and sometimes tumultuous there; but I was able at all times to distinguish both sounds of the heart, sufficiently to enable me to say that there was no morbid murmur masking either.

At first, from the cough, the dyspnea, the quick pulse and crepitus, the pallid look, and more particularly, from the partial aphonia, the hectic appearance, and the family history, some suspicion of phthisis was excited in my mind; but I rejected the supposition, and wrote down the diagnosis—"heart disease; probably regurgitation through the mitral valves; œdema of both lungs, at base."

I pass over all details of treatment, which was merely confined to

the exhibition of such remedies as, from time to time, he seemed to require, to palliate urgent suffering.

He had been noticeably worse for some days, but died rather suddenly, nevertheless, on the 1st of January, 1862.

A *post mortem* inspection of the body was made 12 hours after death, and, I confine myself to reporting the state of the lungs and heart.

The lungs were healthy; that is to say, there was no tubercular deposit whatsoever in them; but they were, at their lower part, very much congested, and very red. Still, they crepitated, and portions of this engorged part floated, when put into water. There was no true pulmonary apoplexy.

A cluster of bronchial glands, very large, and very dark in colour, almost surrounded the lower part of the trachea, and may, by their pressure have induced the paroxysms of aphonia, and the stridulous breathing suffered from during life.

The heart was large, firm, and free from fatty degeneration. The right chambers were healthy; the right ventricle contained some fluid black blood. The walls of the left ventricle were thickened; its cavity contained a large fibrinous coagulum. The valvular apparatus at the left auriculo-ventricular orifice was disorganized. There was a permanent opening, or slit, of an oval form, through which the blood must have in part regurgitated during the ventricular contraction. The valves were hard, contracted, and thickened, and there were warty vegetations upon them in two or three situations.

It may be worthy of remark, in connexion with the sudden death, that one of the chordæ tendineæ attached to the valvular edge was ruptured from the wall of the ventricle; but whether this occurred *post* or *ante mortem*, I am unable to say.

At the aortic orifice we found two or three small granular vegetations or warty tumours deposited on the edge of the sigmoid valves, and producing, consequently, *insufficiency* in them. They were no longer able to fulfil their normal duty of closing the aorta against the recoil of the blood, as was proved by pouring water into the vessel, and noticing that it passed easily and speedily into the ventricle.—*January* 25, 1862.

Contraction of the Left Auriculo-Ventricular Opening.—Dr. Bannon presented a specimen of this disease, which occurred in a female under his care, who died on that day week in the Mountjoy Prison. She was 31 years of age, and had been for 16 months in prison, having led a very irregular life. She had been complaining for some time of dyspnea. She had watery expectorations, occasionally mixed with blood of a dark colour, and violent palpitations, with severe pain in the region of the heart, extending all over the chest. Her pulse was weak, unequal, rapid, and occasionally intermitting. When the expectoration ceased, the dyspnea became violent,

accompanied by orthopnea. On examination, by auscultation, he found considerable dulness over the region of the heart, and there was with this a peculiar soft bruit accompanying the second sound of the heart, which was audible a little above the apex of the heart. There was also a slight regurgitant murmur during the first sound, about which he could not thoroughly satisfy himself. He conceived that there was disease of the mitral valves, with contracted opening, and he did not think he ever saw a case in which the contraction of the opening was found so complete as in this. A mere semilunar slit constituted the auriculo-ventricular opening, and it was almost closed. The symptoms were very interesting. At one time, after a violent attack of palpitation, the pulse became exceedingly slow. She first fainted, after which the pulse came down to 34, and it was found, on applying the stethoscope, that the action of the heart was not so slow as the pulse. He was present on that occasion, and also at her death. For a considerable time before she died there was no pulsation in the arteries, but the heart beat on. The heart was hypertrophied to some extent, but there was no disease of the semilunar valves. The lungs were congested and œdematous, and universally adherent on both sides of the thorax. The principal point of interest in this case appeared to be how life could have been prolonged under a condition of such contraction of the auriculo-ventricular opening as was here present. The physical signs were valuable, as indicating the nature, although hardly the extent, of the disease present during life.—*February* 15, 1862.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.[a]

TWENTY-FOURTH ANNUAL SESSION, 1861-62.

Second Meeting, 21st December, 1861.

Dr. Fitzpatrick, in the Chair.

Dr. Minchin exhibited to the society an infantile cranium of a remarkably distorted and unsymmetrical shape. Certain facts connected with the history of the case, during life, having tended to invest the specimen with some degree of obstetric interest, he would briefly detail all the circumstances which had come to his knowledge with respect to it. When he saw the infant first, it had just been admitted into hospital, aged five months, labouring under diffuse bronchitis. The child was of a delicate stamp; the body and limbs had all the appearance of defective nutrition; countenance congested and anxious; there was, however, no

[a] These reports are supplied by Dr. Geo. H. Kidd, Secretary to the Society.

symptoms whatever indicative of cerebral disturbance. The patient made a very fair recovery from the chest attack, but during its stay in hospital the singularity of its cranial contour having become the occasion of no small gossip among the women in the ward, the mother of the infant gave the following account of the matter, in reply to the inquiries which Dr. Minchin addressed to her on the subject, namely :—

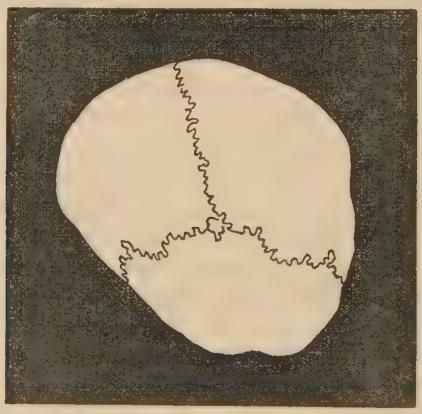
That she had been delivered of this, her first child, about five months previously, in the Dublin Lying-in Hospital; that her labour was a very protracted and difficult one, and was completed with the aid of instruments of some kind, while she was under the influence of chloroform; that the "doctors" had a long account of the child written in a book, and that they employed a gentleman to make a picture of the child's head.

Having received this account, it was thought advisable to make inquiry at the Lying-in Hospital; and on searching the records for the case of M. C. it was found that no patient, of that name, had been delivered there, at the period indicated by this young woman; but that on the same day, and in the same ward, a patient, named H. R., aged 22 years, had been delivered of a male infant; that the forceps was employed, on account of delay in the second stage, (about 10 hours); and that the extraction of the head was *not attended with any difficulty whatever*. This appeared to be the only forceps case which occurred at the period named by the woman C., and it was reasonable to conclude that the cranial distortion, (if any existed), could not have been very great, else it would have elicited some remark in the clinical report, every peculiarity worthy of note, in such cases, being always carefully observed and recorded.

This infant was again admitted into hospital at the age of nearly eleven months. Its condition at that period was as follows: emaciation extreme; skin pale, flabby, and dry; diarrhœa very urgent; hard, dry, irritative cough; disinclination for food, (it had been weaned about a month previously); there was no unnatural heat of scalp; nor protuberance of the anterior fontanelle, which was very large; nor had convulsions ever occurred. The child lingered for about five weeks, and died at exactly twelve months of age.

The autopsy revealed abundance of crude tubercles in the lungs and the mesentery, with patches of ulceration in the small intestines. The membrane closing the fontanelle having been carefully removed, the lateral ventricles were tapped, but the quantity of serum obtained, from both sides, did not amount to six fluid drachms. On examining the cranial sutures, the lambdoidal was observed to have a singularly unsymmetrical outline, the occipital bone having developed much in excess towards the left side; and this fact was strongly opposed to the notion entertained by the infant's mother, namely, that instrumental compression had given origin to the obliquity which this part of the head was found to possess; for, no degree of compression exercised by the forceps, however severe or

long continued, could have any action on the cranial bones, save that of altering their relative position one to another, (putting fracture and contusion out of the question); it could not possibly cause the natural *outline* of any one bone to pursue a new and unusual course. The clinical history of the labour, moreover, as obtained at the Lying-in Hospital, is quite conclusive upon this point. It would appear, therefore, that the abnormity of shape, exhibited in this cranium, was merely an exaggerated degree of



that want of symmetry so commonly observed in infantile heads, and was connected, in some way, with a delicacy of original constitution, which gradually developed itself in the form of a general tuberculosis. It was to be remarked, in this case, that not only was the anterior fontanelle much more open than it is usually found in children of one year old, but none of the teeth had made their appearance.

Mr. Tufnell read the following case of *Extra Uterine Fetation—Twin Conception from the same Ovary—Normal descent of one fetus into the Womb; arrest of the other in the fallopian tube; escape from thence, by ulceration, into the cavity of the abdomen, followed by hemorrhage, and death in* 24 *hours.*

M. K., a young woman, twice married, and who, seven years before, had given birth to a healthy living child, was again, on the 6th of July, 1860, between three and four months pregnant. Upon the evening of this day she was in the act of getting into bed, when she was seized with a sudden and severe pain in the lower part of the abdomen. She had walked, during the day, upwards of four miles, and was somewhat fatigued. She was seen about an hour and a half after the first onset of pain, and had then a weak fluttering pulse, with a countenance pale, anxious, and pinched. Great pain was complained of over the whole abdomen, more particularly in the umbilical and right iliac regions. Upon examination per vaginam, the os uteri was found advanced and

slightly retroverted, its orifice contracted. An anodyne of a *full* dose of opium was prescribed, and wine ordered to be given; whilst hot jars were applied to the feet.

Five hours afterwards she was in the same state, and no stimulants, ammonia, brandy, or wine, appeared at all to rouse her.

At nine P.M. she expired; having been ill, from the commencement to the close, only twenty-four hours.

The *post mortem* examination was made fifteen hours after death. The abdomen was bulged out and protruded to a degree considerably beyond what it would be at this period of pregnancy. Upon opening the walls upwards of three quarts of fluid and clotted blood escaped, amongst which was found floating a diminutive fetus. Upon making further investigation a rent was discovered in the right fallopian tube, out of a cyst in which, this fetus had escaped. The contents of the cyst seemed to consist of coagula and shreds of lymph.

The fallopian tube and right ovary were agglutinated together by shreds of recent lymph.

Upon making a more careful inspection of the fetus, the uterus, and its appendages, the following was found to be the actual condition of each. The fetus itself was barely an inch in length, and only a few grains in weight. It appeared to be a male, from the development of penis, but this growth might possibly be clitoridal. The head and eye, the arms and hands, and the ribs, were very clearly perceptible, and the spine, with a cleft at its inferior half. The lower extremities were less fully developed.

The uterus was enlarged to about the size of the third or fourth month of pregnancy, and contained a healthy male fetus, proportionate to the date of conception, connected by the umbilical cord to the placenta, which was still attached to the fundus uteri.

The fallopian tube on the right side was largely dilated; the dilatation, which had been ruptured by the escape of the fetus being one and a half inches long; commencing about three quarters of an inch from the uterus, it contained, at its upper or distal extremity, a solid organized mass, resembling a miniature placenta. Immediately above this dilatation, viz., on its outer border, the fallopian tube was of its natural size, and the fembriated extremity perfectly natural.

The ovary on the right side was nearly twice the natural size, and appeared to be divided into two equal portions by a kind of hour-glass contraction. Upon dividing the ovary through this double enlargement, by a longitudinal incision, a distinct corpus luteum was seen in each division, one occupying either of the portions into which the ovary was divided.

Upon the left side the ovary and the fallopian tube were in their normal condition; so that both ova had, in this instance, escaped from the right

ovary. The os uteri was tightly closed, and the cervix pointed, and if facts to the contrary had not been known, it might have been considered a primiparous conception.

This woman, then, it is clearly evident, died of internal hemorrhage, in consequence of the rupture of the cyst in the fallopian tube, and the escape of the extra uterine fetus into the cavity of the belly.

For the opportunity of detailing this case, and securing the preparation, I am indebted to my friend Dr. Lockwood, surgeon of the Royal Scots Greys. The preparation is in the museum of the Royal College of Surgeons in Ireland.

Dr. Kidd exhibited a dissected preparation of a large congenital tumour of the head, along with a highly finished coloured drawing, by Mr. Connolly.

The woman, whose child was born with this tumour, was an extern patient of the Coombe Hospital; her labour was not attended with any difficulty. This was her third child, her previous ones being quite healthy; it was brought to the Coombe Hospital the day after its birth, with the hope, that the tumour might be removed by surgical operation, and was admitted with the mother, that it might be kept under observation.

The tumour sprang from the region of the posterior fontanelle, it was connected to the head by a short pedicle, measuring 4 inches and $\frac{3}{4}$ in circumference, and 1 inch in length. From this the tumour

swelled out into a globular form, and measured 25 inches in circumference. It was covered, for the most part, with normal integument, and for some distance from the head, had hair growing upon it. In some places, remote from the head, the covering was thin, transparent, and

dark coloured, allowing the parts underneath to be seen through it. The tumour evidently contained much bloody fluid, and a large quantity of solid matter, this latter being most abundant near the head. The child was well developed, in every respect, except the head, which was small, the frontal region being much flatter than natural. It took the breast well, and seemed to be a healthy well-thriven infant. It bore pressure on the tumour, or on the pedicle, without apparent inconvenience, it seemed to feel the pressure, but suffered neither from coma nor convulsions. After some days, ulceration at the thinnest parts occurred, and large quantities of serum escaped, reducing the size of the tumour considerably. The child now ceased to take the breast; and died on the twelfth day, apparently, from the irritative fever of the ulceration.

Twenty-four hours after death, the roof of the skull, with the tumour attached to it on one side, and the brain and dura mater on the other, was removed. On reflecting the integument covering the pedicle, a strong fibrous sheath was found, attached at one side to the edge of the fontanelle, and continuous there with the peri-cranium and dura mater, and expanded over the tumour at the other, in the walls of which it was gradually lost. A section, extending right through the tumour, was now made. It was found to be composed, for the most part, of red, semi-solid substance, presenting not much trace of organisation. Furthest from the head the walls were thin, and here there were large loculi, containing bloody fluid, next the head it was almost solid, but had a small cavity in the centre, which communicated with the cavity of the dura mater, and in it a small nodule of cerebral substance was found, not larger than a small unshelled almond, and which was continuous with the hemispheres of the cerebrum. The brain, as contained in the cavity of the skull, was found to be perfect in all its parts, though small. The brain-like substance in the tumour seemed rather to be an out-growth from the brain, than a part of the brain itself.

As to the nature of this tumour, Dr. Kidd remarked, that two opinions might be held—1st, that it was a hernia cerebri, and analagous to the tumour seen in cases of spina bifida. Against this view the following arguments, he said, might be adduced: *a*—the completeness of the brain itself, as contained in the skull, for, though small, from being deprived of a portion of the blood intended for its growth, it was perfect in its parts. *b*—The perfect development of the child. *c*—The non-production of convulsions, or coma, on pressing the tumour. *d*—The shape of the tumour; the small pedicle and largely expanded mass. *e*—Its structure; the large quantity of red tissue; *formative tissue*, or blastema; and the small size, compared to the general mass, of the cerebral substance. 2nd—It might be regarded, he said, as an attempt at the formation of a double monster; as, in fact, the first stage towards the formation of a double child, such as the Russian child, whose photograph has been deposited, by Mr. J. S. Hughes, in the museum of the College of Surgeons, and which consists

of two perfect children, adherent to one another by the crowns of their heads.

It is now well established, Dr. Kidd said, that double monsters are formed, not by accidental adhesion of twin germs, as taught by St. Hilaire, but by the excess of development of a single germ—that they are examples, as Vrolik expresses it, "rather of singleness tending to duplicity, than of duplicity tending to singleness." The researches of Allen Thompson seem to place this beyond question, he having actually observed the single germ in a goose egg taking on the process of duplication. Nor is it difficult to conceive that it should be so, when we reflect on the process of development. The single "germ cell" dividing and subdividing till it forms a mass of cells, the "germ mass," in the centre and at the expense of which a new cell is formed, and from this, by a similar process of cell subdivision and growth, the blastema is prepared, out of which the new being is formed. This blastema is modelled into the several organs of the new being, under the influence of germs distributed through it.

These germs may be deficient in formative power, when the new being will be defective in one or more of its parts, as in cases of acephalous infants, &c. Or they may be possessed of excessive powers, and give rise to various forms of duplicity—partial, as where the fingers or toes are in excess, a peculiarity that may run through several generations in succession—or complete, as in double monsters.

Dr. Kidd referred to a paper he had published in the *Dublin Hospital Gazette*, in 1856, (vol. iii., p. 82), in which he had attempted to formularise the facts ascertained as to the errors of development, as follows:—

"The formative germ is likely to suffer from errors of quantity; of quality; and of distribution.

"The quantity of formative power and material may be deficient, giving rise to some of the deformities attributed to arrest of development.

"The quality may be bad, giving rise to some of the forms of mole.

"The quantity may be in excess, and the quality deficient, giving rise to such cases as the present; or

"The quantity may be in excess, and the quality good, giving rise to a double monster, more or less perfect, according to the amount of excess; varying from the supernumerary fingers, to the parasite, and the perfect double monster.

"Finally, the balance of distribution may be wrong, as in some cases where part of the body is deficient, and other parts are in excess."

The tumour that formed the subject of the paper referred to, grew from the hard palate of a well developed child, protruded from the mouth, and was nearly as large as that growing from the head in the present case. In it there were germs, distributed throughout the mass, possessed of very considerable developmental powers; which produced in one place a finger, in another a portion of very perfect intestine, and in others

various portions of bone, &c. The great mass of the tumour consisted of tissue analagous to that forming the mass of the tumour in the present instance. The intestine, in that case, presented this remarkable feature, that it was double; in fact, the germ by which it was formed, had such an excess of power as to double itself, so that if all the germs had posessed similar powers a triple monster would have been produced, instead of a merely double one.

In the case now laid before the society, it would appear that an excessive quantity of material was produced, but of such a quality, or, rather, so deficient of developmental power, that no organisation took place, except at the point where the process began, viz.: at the brain, and even there to a very limited extent.

The tumour springing from the sacrum, laid before the society by Dr. M'Clintock some years ago, was probably of the same character, viz: an excessive formation of material without powers of organisation. The tumour referred to, as growing from the palate, presented the same excess of material, but with higher power of organisation.

The well-known case recorded by Sir E. Home, where a perfect child had a head, with a complete brain and well marked features, but no body, growing from the back of its own head (from the same region as in the case under consideration), exhibits a further advance in the process; the power of organisation being of a very high order; and the Russian child, already referred to, exhibits the same process, in its highest degree, both the quantity of material and the powers of organisation being sufficient for the development of a perfect double child.

Dr. Halahan read the following paper *on the Mechanism of Labour* :—

The position in which the head of the fetus enters and passes through the pelvic cavity during labour, has long occupied the attention of many midwifery practitioners, and given rise to a great deal of discussion. But I am convinced every practical man must allow that the description given by Naegelè, is the accurate, and also the only correct one; and that the practitioner cannot, with any degree of truth, contradict the statement that the head, at the full term of gestation, enters the pelvis in the four positions described by him. I shall here briefly enumerate them, the first has the anterior fontanelle directed to the right sacro-iliac synchondrosis, and the posterior one towards the left foramen ovale; the second, is where the anterior fontanelle is, to the left sacro-iliac synchondrosis, the posterior one to the right acetabulum; the third is the reverse of the first, and the fourth of the second.

I am equally certain that those who pursue the study further, will agree with me in saying, that although the head enters the brim in the before-named four positions, yet, at the commencement of labour, when the os uteri is barely beginning its dilatation, the anterior fontanelle is

always directed towards either acetabulum or presenting in the third or fourth positions of Naegelè. That the fourth changes, at the beginning of labour, into the first; and the third does not change into the second until the head is distending the perineum; that this is the general course, any other being an exception.

That to diagnose the position in the first stage of labour, is one of the difficulties that the accoucheur has to overcome, I am fully aware of. Nothing but constant attention, very extensive practice, together with a delicate touch, will, with any degree of certainty, conquer the obstacles, and make him master of this part of his profession; for, although in theory it seems very easy indeed to be able to diagnose positions, or to say which fontanelle presents at either acetabulum, we find, in practice, it is one of the most difficult points to be perfectly satisfied about, particularly when the head is high up, the membranes entire, and the os uteri not more dilated than to the circumference of a shilling.

If, then, it is a fact that at the commencement of labour the face is always directed towards the pubes, (and I have taken the greatest care and trouble to be perfectly certain, and have fully satisfied myself that it is so, not by the mere examination of a few ordinary cases, but by the most careful and constant investigation of some thousands of patients which I had the opportunity of watching from the commencement of labour until the completion of the second stage), there arises the question, how is it we so seldom find the head in the fourth position when entering the brim, or even in that position when the os uteri is half dilated, but on the contrary, generally discover it in the first? Whereas, in the third, it is the exception for the change to the second to take place until at the termination of the second stage. The simple answer is, that when the posterior fontanelle is on a lower level than the anterior, the change takes place immediately after the accession of labour, or, in other words, when the chin becomes depressed on the chest, or flexion of the head occurs early, which is the case in the presentation of the head in the fourth position. But in the third, we generally find the anterior one a little lower, or on a level with the posterior, the head being neither flexed nor extended, which prevents the change taking place until the posterior one becomes the lower. This seemingly slight difference in the two makes a very great one in the effect of the uterine action in its efforts to expel the head, and make the change which I shall now try briefly to explain.

I presume all will allow that the pain or force of the uterus takes its course in the axis of the pelvis, and that the entire power may be directed effectually, and with as little loss as possible, it is necessary that the occiput should move in the same axis. This is the case in the first and second positions of Naegelè; consequently, if the head enters the brim in either of these positions, we should expect that labour will

proceed favourably. If we examine a patient at the commencement of labour and find the head presenting in the fourth position, the posterior fontanelle will generally be the lower or most easily reached by the finger, the anterior one being very high up, and felt with difficulty. This admits of the uterine force having full power on the head, and the change taking place at once. But when the anterior fontanelle is on a level with, or a little lower than the posterior one, the greater part of the uterine force is lost, being divided between the occiput and sinciput. This can only be understood by remembering the direction the uterine force takes, as well as the part of the head it has most power on, as we will there see that when the forehead is the lower part, the pain has not its full effect on the head, but that there is a loss of power. This is the case in the third position, which I think clearly shows the reason that the head enters the pelvis in the second position so rarely. Again, if we find the anterior fontanelle presenting, in fact, mid way between the sacrum and pubes, in the third or fourth position, we may naturally expect that the labour will be rather protracted, and the second stage very much prolonged, for the head will, with very few exceptions, be expelled, face to pubes.

It may very reasonably be asked, is there any practical use in being able to diagnose in what position the child's head is presenting? Certainly there is, the greatest. I shall merely mention two instances. In applying the forceps, we always intend and wish to place the pubic blade over the ear, which will be felt a little to the right or left of the pubes. Supposing, then, you have the instrument correctly placed, is it not of very great importance to know which ear is towards the pubes, as in the first and third positions, we have the ear in the right half of the pelvis; but if, not knowing the head is in the third, we try to rotate as if it were in the first, we bring it out, face to pubes, which is not so favourable as if we had changed it into the second position, the occiput not adapting itself to the hollow of the sacrum in the same manner in which the face does? Again, if version is to be performed in a head presentation, is it not of the utmost importance to ascertain whether the feet are lying towards the abdomen or back of the mother, whereby we may know which hand to use in performing the operation, and this fact can only be ascertained by an accurate knowledge of the position?

I have put in a tabular form five hundred cases, in which the head has entered the pelvis, showing the relative frequency of the four positions of Naegelè, taken indiscriminately from the beginning of this year. It will be seen that the first position is the most frequent of all, being 61 per cent.; the third next, being 31·60 per cent.; the fourth next, being 6·40 per cent., and the second least of all, being 1 per cent. That the third changed to the second in every four cases out of five, or nearly so, the proportion being 79·75 that changed, and 20·25 expelled

face to pubes. The fourth changed into the first in 84·37 per cent., and continued as it entered the pelvis in 15·62 per eent.

THE ASCERTAINED POSITIONS IN 500 CASES, 1861.

	POSITIONS OF NAEGELE.							
	1st	2nd	3rd	Primary 3rd changed to 2nd	Total, 3rd Position	4th	Primary 4th changed to 1st	Total, 4th Position
Total in 500 cases,	305	5	32	126	158	5	27	32
Per centage, . .	61	1	6·40	25·20	31·60	1	5·40	6·40

Of the 158 cases in the 3rd position at the commencement of labour, 126, or 79·75 per cent. changed to the second; and of the 32 cases in the fourth, 27, or 84·37 per cent. changed to the first in the progress of the labour.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.[a]

(Continued from vol. xxxiii., No. 65, p. 240.*)*

SESSION 1861–1862.

OCTOBER, 23rd, 1861.

DOCTOR POPHAM, President, in the Chair.

Rigidity of the Left Lower Extremity from Anchylosis; Caries of the bones of the Ankle Joint.—DR. POPHAM exhibited the foot and a portion of the leg of a woman, the foot being extended to such a degree that the toes were drawn backwards towards the sole, and the nails buried in the flesh, producing a most distorted appearance. In connexion with this condition there was a rigid and attenuated state of the whole limb. The history of the case was as follows:—

Bridget Curran, a shirt maker, about 35 years of age, unmarried, was admitted into the Cork Union Hospital, under his care, in May, 1858, suffering from what is popularly termed "a stone bruise." She had several uncured abscesses of the absorbent glands of the neck, and had

[a] These Reports are supplied by Dr. W. P. Bernard, Secretary to the Society.

besides, complete aphonia. The heel had become the seat of a small abscess which healed thoroughly to all appearance, but tenderness continued to be felt in the part and spread over the dorsum of the foot. Dr. Popham examined the parts carefully and repeatedly, but was unable to find any obvious cause for the severity of the pain, which was more superficial than deep-seated. After a patient trial of various remedial agents, he found that nothing produced any alleviation of the case, and that the foot was gradually becoming forcibly and painfully extended, any attempt to bend it upon the leg giving rise to violent pain, and even the touch of a sponge could scarcely be borne. Startings of the limb occurred constantly, and the patient found most relief by sitting up in bed with the legs hanging down. Without presenting any visible marks of inflammation, the foot continued to be drawn backwards until it seemed almost in a right line with the leg, assuming somewhat the position which a ballet-dancer tries, by great muscular exertion and long practice, to maintain, when balancing herself upon the toes. At this period of the case amputation was proposed, but after a careful examination of the lungs, the existence of tubercle was clearly ascertained, which necessarily precluded its employment. The limb then began to waste away, and the knee joint to exhibit similar suffering, terminating in similar rigidity. The ailment continued slowly to travel upwards towards the hip, so that eventually the whole extremity became rigid. There was no sign of abscess or fistulous opening anywhere, but nothing could equal the attenuation of the limb, it looked dry and shrunken, like bone covered merely with skin, the other leg which retained, till towards the close, its natural size, appearing, by contrast, large out of proportion. She continued in this state nearly three years, the hectic fever and pain being kept in check by the careful use of opium, but she finally sunk from the tubercular disease of the lungs, her mind being clear to the last.

The *post-mortem* examination of the parts showed the existence of true anchylosis in the knee and ankle joints, but the hip joint still admitted some motion. In the ankle joint, the cavity was nearly obliterated, and the articular extremities were held firmly connected by a tough fibroid tissue, so that the power of flexing the foot was lost. The foot was greatly distorted, the concavity of its arch being increased so much, that when it rested on the great toe and heel, a perpendicular from the middle point of the chord of the arch upon the foot, measured two inches. The great toe was twisted downwards and outwards, considerably beyond the line of the other toes, which successively became less and less curved backwards, the little toe being least so; the nails were deeply imbedded in the flesh. On examining the adductor and flexor muscles of the great toe, they appeared in a thickened and tetanic state, curving it downwards, and increasing the arched form of the foot. Most

of the other muscles appeared degraded into mere cellular tissue of an orange colour; the tendo Achillis showed but little alteration.

On examining the internal state of the bones, the lower portion of the tibia was found enlarged, and on breaking it across, it exhibited the dendritic appearance of a carious bone. Its colour was pinkish, the cancelli were wide and full of a colourless fatty fluid, turning the knife black; the cartilaginous margin was easily separable. The astragalus was so soft as to be cut through by the knife; its cells were also expanded and full of the same fluid. The large toe, which was supposed unsound, was found unaffected. The most careful examination failed to detect any sinus in the parts. The lungs and liver were extensively diseased.

Dr. Popham remarked, that in the preceding case, one of the chief features was its slow progress, when compared with the intensity of the pain and hectic fever, and which he considered partly due to the judicious use of opium. For some time the affection of the joints seemed, instead of accelerating, to check the pulmonary mischief. Another circumstance which protracted the case, was, no doubt, the total absence of external abscess or sinuses. The patient was of a habit of body intensely scrofulous; for a time, cod liver oil and the preparations of iron seemed to afford her some benefit, and a favourable change in the pulmonary textures was anxiously looked for, such as would render amputation justifiable, but unfortunately the hope proved delusive.

NOVEMBER 13th, 1861.

DR. POPHAM, President, in the Chair.

Cirrhosis of the Liver. DR. WILLETT, exhibited the liver and spleen of a patient who had died from Cirrhosis of the Liver, and related the following particulars of the case.

The present case which Dr. Townsend has kindly allowed me to bring before the Society, has not the fullest details that I could wish, in consequence of the deceased being a foreigner, and incapable of speaking our language. The same cause prevented me from ascertaining the antecedent circumstances, and his illness before he came under our notice.

William M'Carthy, aged 40, was admitted into the Workhouse Hospital, on October 23rd, under the care of Dr. Townsend. On admission, the skin, generally, presented a brownish yellow colour, like the appearance of past jaundice. The lungs, on auscultation, seemed normal, as also the heart sounds, but with respiration there was more or less slight crepitus, which seemed due to accumulation of water in the air cells, as the crepitus seemed very fluid, the abdomen was very tumid, from the presence of fluid, and Dr. Townsend and myself, on palpation, found the spleen much

enlarged, extending from the left hypogastric region into the epigastric. The liver was not so easily made out, in consequence of the great distension of the abdomen with fluid, and the tightness of the recti and the other abdominal muscles, which some authors have given, I believe, as one of the symptons of disease of the liver.

After admission, the urine was suppressed, and diarrhœa set in, which, on being stopped, again the kidneys resumed their function, and then for some little time, these secretions became vicarious, one stopping whilst the other continued. The treatment was directed to support the patient, who was extremely weak, and also to get rid of the fluid by the secretions; but he gradually sank under its accumulation, and general prostration. The veins on the outside of the abdominal walls were much enlarged, and kept up a communication with the lower extremities, by means of the epigastric veins, thus indicating some internal obstruction to the circulation.

Post-mortem.—The lungs nearly normal, excepting some few old pleuritic adhesions; the abdominal cavity very full of fluid; the peritoneum looking flabby and soft, from its being soaked in the liquid contained in it; the kidneys large and congested with blood; the spleen very turgid and increased in vascularity; and the liver much contracted, and having adhesions on all sides so as to render it difficult of removal; the peritoneal coat much thickened, showing that inflammation had thus increased it; the gall bladder hanging very loosely from the lower part of the liver, and the bile all absorbed; the lower surface of the liver full of small indurated masses attached by narrow peduncles, and showing here, as well as over its entire surface, the effects of inflammation, (I may be allowed to surmise that it is greater at the lower part, in consequence of the products of inflammation gravitating to the most dependent points); the omentum nearly gone, and of a blackish colour, either absorbed from the pressure of the fluid to which it was subjected, or taken up for nourishment as fat into the system.

The spleen was very much increased in size, which, I think, was due to the portal system being obstructed, and serving merely as a safety valve to the impeded circulation through the liver, until it should find its way through collateral circulation, therefore not a disease of itself, but only one of the sequences of the diseased liver.

I find that inflammation of the liver is divided into that affecting the substance of the organ, and that of the capsule. The former affection is a rare one in temperate climates; that of the capsule extremely common. Drs. Bright and Budd, prove that in the early stage of cirrhosis, the liver is enlarged, and this depends on the effusion of serum, and lymph, into its textures, as the result of inflammation, the cirrhotic state arising from a subacute inflammation being set up in the Glissonian sheaths. The remote cause of cirrhosis, Dr. Budd says, is certainly, in many cases, the

habit of spirit drinking. The alcohol absorbed into the portal blood, first passes through the liver, and very probably excites some action on its tissues, the spirit acting perhaps as a local irritant having greater affinity for the liver than for other organs, as shown by the fact, that in animals poisoned by it, at death, nearly all can be distilled from this organ. But another cause is given, viz., that the blood is changed into what Rokitansky calls the fibrinous crasis. Obstructive cordiac disease also, is given as a cause, but as only a predisposing one. Congestion favours the occurence of both inflammation and degeneration, so that both the heart disease—that is, constriction of the mitral orifice, and cirrhotic change in the liver, are often, I think, common results of the same condition of blood to which I have alluded. Many other causes are given besides alcohol, viz., such as increase the quantity and alter the quality of the fibrin of the blood.

Several useful questions suggest themselves in this case, viz.: can we detect the first stage of cirrhosis, that is, when the products of inflammation are thrown out? Whether we shall consider it as hepatitis, acute, or chronic, considering that Glisson's capsule enters into one-third of part of the organ, (the bile cells only excluded) or, an inflammation special to the Glisson's capsule. The signs and treatment of such inflammation; and lastly, if we can remove the products of this inflammation by absorbents, iodide of potassium, mercury, &c.; or whether, as in inflammation of the pleura and peritoneum, they become, in time, as parts of the body, receiving vessels from the same source, and therefore soon incapable of such absorption, and only shrinking by age, but never entirely dispersed, if not removed during the inflammatory stage.

On the Treatment of Psora in Military Hospitals. By T. W. Belcher, M.A. and M.B., *Oxon. and Dublin;* L.K. and Q.C.P., Ireland; Physician Extraordinary to Cork Fever Hospital, &c.

There are few diseases which the physician is called on to cure, so disagreeable as psora; not indeed in its consequences, but in several of its accidents.

Whilst sulphur ointment reigned supreme, the soldier who had the misfortune to contract it, more nearly resembled the outcast leper of sacred history, than any other diseased mortal in these countries.

If *he* was not compelled to cry "unclean, unclean," to all his neighbours, it was unmistakably done for him; and plastered all over with greasy sulphur, his confinement "sine *cloake*, sine *shirt*, sine *britches*," (like that of the dead Lord Mayor of London[a]) was only relieved by copious libations of haustus sennæ, ever and anon recurring with the regularity of drums and fifes at roll call and reveillé.

[a] Pettigrew's Chronicles of the Tombs, p. 474.

But at length an ingenious writer in *Braithwaite's Retrospect of Medicine and Surgery*, (vol. 34, p. 266) propounded the new theory, that psora could be cured in half an hour, without either sulphur ointment or black draught.

It was tried at Chatham, Aldershot, and Woolwich, in each place with perfect success; thereupon it was recommended for general adoption and we can only say, that if each case falling into the medical man's hands, could be so easily cured as those to which we refer, the profession —even in this intensely practical age—would speedily regain its ancient magical renown.

Braithwaite's Retrospect says, "the remedy is prepared by boiling one part of quick lime with two parts of sublimed sulphur, in ten parts of water, until the two former are perfectly united. During the boiling, it must be constantly stirred with a piece of wood, and when the sulphur and lime have combined, the fluid is to be decanted and kept in a well stopped bottle. A pint of the liquid is sufficient for the cure of several cases."

During the training of the militia of this city (of which I have the honour to be the medical officer,) in the past summer, three men, John Farrell, Thomas Murphy, and Murtagh M'Carthy, on coming up for drill were found to be infected with this disease, and were subjected to the following process, viz.:—

First, a hot bath, then the fluid preparation above described was diligently rubbed into the skin for more than half an hour. As the fluid evaporated, a layer of sulphur was laid on the skin, and this was removed by a second bath, leaving the subjects—for they could hardly be termed *patients*—completely cured. During the rubbing of the preparation, the acarus was killed, and although all traces of the scabs were not immediately removed, yet the scabs themselves were.

In Belgium, the treatment is anticipated by rubbing the body for half an hour with black soap, but the writer in the *Retrospect* says this is not necessary, the careful application of the fluid sulphur being the only essential act.

The compound formed in the preparation referred to, is a pentasulphide of calcium and a hypo-sulphite of lime.

Dr. Frazer of Dublin gives the combination and result in the following formula:—

$$3CaO+12S=2CaS_5+CaOS_2O_2$$

Medical officers of dispensaries have frequent reasons to complain of the inveteracy of this disease, when treated by all ordinary remedies, but (provided a change of clothing could be ensured to the patients) by the plan here noticed, an immediate cure can be effected.

Albeit, psora is unmentionable, in plain English, to ears polite, yet physicians have often met with it and found difficulty in treating it

amongst what we call "the better classes,"—here is an easy plan for subject and physician.

In the case of militia men called out for training only during a few weeks in the year, it is plain they, by this plan, give some value for their pay, instead of spending all their time in the leper house of the regimental hospital.

A Case of Difficult Labour, from Malformation of the Pelvis, complicated with a Uterine Polypus. By William S. Gardiner, M.D.

Ellen Furlong, 30 years of age, the wife of a soldier, was admitted into the lying-in ward of the Cork Workhouse Hospital on Thursday, 26th of September, 1861, at seven o'clock, p.m., in labour with her first child. It commenced with a dribbling of the liquor amnii, the dilating pains recurring about every 20 minutes. She continued in this state until Saturday morning, the 28th, when the os uteri became fully dilated, the head presenting. At 10 o'clock of the evening of the same day I was called on by the midwife to attend, and as the patient had not emptied her bladder for some hours previously, I used the catheter, and took away about a pint of water; after which, finding, on examination of the parts, the head so firmly wedged in the pelvis that she could not possibly be delivered without the use of instruments, I tried to apply the forceps, both long and short, with all the adroitness I could, but did not succeed; so I forthwith wrote a note to Dr. Popham, informing him of the case—that I tried, but could not apply the forceps, intimating to him my apprehensions, that the patient could not be otherwise delivered than by using the perforator, and wishing his assistance, which he most kindly and promptly afforded me.

On his arrival he, with great patience and perseverance, for an hour, at least, tried to apply both the long and short forceps, but could not succeed in bringing them to lock, the blade passing on the right side with ease, but an insuperable impediment existed on the left to its introduction. As the soft parts were enormously swollen and painful, and the woman's strength was fast giving way, we were reluctantly compelled, in order to save the mother's life, to desist from all further efforts to deliver the child by the forceps; the possibility of its being yet alive, from the circumstances of the case, seeming very unlikely, we resolved to reduce the size of the cranium by emptying it of its contents. Doctor Popham perforated the head without any difficulty; but we both experienced great resistance in drawing it forward, owing to its ossified state, which made it quite unyielding. There existed besides a great distortion of the pelvis, arising from a very contracted state of the pubic arch, and a close approximation of the tubera ischii; there was also a uterine polypus, about the size of a large pear, rather flattened, which had been

forced down into the vagina, and which I afterwards detected on introducing my hand to remove the placenta. After long perseverance, through fear of using any undue violence, lest the soft parts might be injured, we succeeded in drawing down the cranium. I am almost inclined to think that we should have failed in accomplishing this by the ordinary means, were it not for our having recourse to the duck-bill craniotomy forceps of Dr. Davis, which, most fortunately for us, Dr. Popham brought along with other midwifery instruments. After freeing the cranium, the question then arose, how we were to liberate the shoulders, which seemed to us equally difficult from the exceedingly contracted state of the pelvic bones; but we ultimately succeeded in doing so by great ingenuity in the use of the blunt hook, and thereby most cautiously drawing them out; the remainder of the body was brought out after some little delay, but not without trouble. The placenta was attached to the fundus uteri, and had to be removed by introducing the hand, and was further impeded by a strong hour-glass contraction, which offered considerable resistance.

As much diarrhœa followed the delivery, and her condition was most precarious, we were obliged to give her a large quantity of wine. When she rallied somewhat, we administered 50 minims of tincture of opium in a camphor draught.

Sept. 29th.—The nurse stated that she had some sleep, interrupted by starts of pain. A smart hemorrhage occurred in the morning, which was checked by the usual remedies. At present her face seems perfectly blanched; the pulse very rapid and fluttering; some tenderness is felt on pressing the abdomen; tongue dry and brown; the vaginal surface was swollen and livid. She was ordered wine freely, and pills every fourth hour, consisting of a grain and a-half each of calomel and camphor, and one grain of powdered opium in each pill. The vagina to be syringed with warm water and camphorated spirit in the proportion of half an ounce to about a pint of water. A turpentine epithem was ordered for the abdomen.

Sept. 30th.—Since last report she took six pills, containing six grains of opium, with much relief; tongue dry; pulse 120, feeble; abdominal tenderness relieved. She was unable to pass water, and the catheter had to be introduced. Tendency of the soft parts to assume a sloughing appearance. Gums feeling a little tender. To take the pills every sixth hour.

Oct. 1st.—The soft parts beginning to slough; she complains of much pain within the vagina; and there was a copious foul discharge. Prostration very great; retention of urine continues; the mouth is becoming sore. Omit the calomel. She was ordered to take a pill of two grains of camphor and one of opium, made up with aromatic confection, every sixth hour; to continue her wine, and to get strong beef tea through the day. A yeast poultice was ordered for the soft parts.

Oct. 2nd.—Some improvement in the state of the soft parts. Ordered to continue everything.

Oct. 4th.—Same treatment continued. Retention of urine persists. The nurse reported that portions of a fleshy substance had come away. The soft parts show a healthy surface. It is unnecessary to detail the daily state of the case, the improvement being gradual, though she suffered greatly from exhaustion. The soft parts assumed a clean, healthy appearance; the retention gave way with a *sudden* gush of water; and on examining for the polypus with the finger, we found that it had sloughed off. On the 10th she was ordered meat, and on the 16th the wine was changed to porter, and she was directed to take a tonic bitter of infusion of colomba, with compound spirit of ammonia, and tincture of cardamoms. As there was a thin purulent discharge of an irritating nature, a vaginal injection of oak bark decoction was used.

Nov. 5th.—The patient has been up and about for some time; and as she expressed a wish to go home to-day, we made a close examination of the vagina with the speculum, as we dreaded at an early period of the case, from the pressure on the bladder and the inflammation of the soft parts, that a urinary fistula might occur. We found, with much satisfaction, that the entire vagina was quite healthy, except a very slight ulceration, not yet quite healed, near the external labia. The os uteri was a little patulous, but no trace of the polypus existed. We had thus the satisfaction of sending this poor woman home without having sustained any injury whatever from her severe sufferings, and, except a remarkable degree of paleness, showing all the appearance of returning health and strength.

I would draw attention particularly to the free use of opium in this case; it appeared both to allay pain and keep down inflammation. Though taking, at one period, six grains of opium a-day, she showed none of the untoward effects of the medicine. It was evident that the retention of urine must have been caused by the pressure of the polypus upon the urinary organs, as, upon the sloughing away of that body, a gush of urine took place, and the retention totally disappeared.

Dr. Willett exhibited a pathological specimen, and related the following particulars of the case.

Michael Mehegan has been 13 years in the workhouse and hospital; having generally suffered from bad health, which seemed due to his possessing the scrofulous diathesis. Four years since he was attacked with paralysis in the right leg, which prevented his moving about in the usual way, and thus necessitated his lying more or less in bed. Still later, two years since, he had an attack of hematuria, which lasted for three weeks, but gave way to the treatment ordered by Dr. Townsend. From that time till the present he enjoyed his usual health.

On October 29th, '61, he had a second attack of hematuria, which continued till his death. He usually passed about five pints of urine per diem, coloured with blood, but only in a very small stream, and at last only guttatim. There were no calucli voided with the urine, but sometimes a thick substance which gravitated to the bottom of the vessel, which, from the *post mortem* appearance, very likely contained pus globules. He complained of acute pain over the region of the bladder when the hand was placed there, but had not the slightest pain when pressure was made over the lumbar or renal region.

On October 7th he was ordered stupes of turpentine, with gallic acid and Dover's powder, of each 10 grains, three times in the day (urine continuing as before); and pain, on pressure, still in the region of the bladder.

November 7th.—The pain continuing, was dry-cupped over the renal region, and ordered half a drachm of tincture of opium three times a day, with two bottles of soda water, and the gallic acid also continued, which treatment he used till his death, on November 14th; the amount of blood still continuing, and the pain over the bladder, though less than before, still felt on pressure. The only symptom showing that the disease was in the kidney was, that the blood was intimately mixed with the urine, and not coming away with the last drops, as it would do if from the bladder, and at the same time would not have been so thoroughly in solution.

Post-mortem and pathological appearances.—The viscera below the diaphragm healthy, with the exception of the kidneys. That on the right side being so much attached as to render its removal difficult. Its structure was much disorganised, and its bulk greatly increased and overlaid with adipose matter. That on the soft side was very large, and containing three sharp-pointed calculi, which I have, by tests, found to be oxalate of lime, with organic matter. Their size and shape must have produced great irritation to the kidney. They could hardly have been extracted, I think, by the ureter. The bladder was much disorganised by chronic cystitis; and at the right superior angle an ulcerated opening was seen, which would account for the great pain on pressure in the pubic region. The prostate gland was not much enlarged though the common opening of the vesicula seminalis, and vas deferens was very much increased in size. The ulceration in the angle of the bladder did not penetrate the peritoneal coat; and it was only in removing it that the urine escaped from the opening.

Dr. Finn exhibited a mulberry calculus about the size of a kidney bean.

The subject of this case was a female in an advanced state of pregnancy, who was brought to the Lying-in Hospital, suffering from pains

which were supposed to be connected with parturition. On making an examination, the calculus was observed to protrude from the orifice of the urethra. On its removal the pains immediately subsided.

DECEMBER 11th, 1861.

DR. POPHAM, President, in the Chair.

Observations on some Cases of Diphtheria. By DENIS CHARLES O'CONNOR, A.B., M.B., T.C.D., Professor of Practice of Physic, Queen's College.

Having recently been called on to treat some cases of diphtheria, and having heard that cases also presented themselves in the practice of other physicians in this locality, I thought it might be useful to bring the subject under the notice of the society, that we might not be unprepared, if this fearful malady should appear amongst us in an epidemic form. On former occasions, we had opportunities of observing the evils which resulted, when physicians were unacquainted with an epidemic at its first outbreak, as in the case of scorbutus or land scurvy, which existed for a long time before it was recognised by many physicians otherwise well informed, and who, consequently, could not apply the proper remedy, though so obvious, effectual, and of such easy application.

Every physician of much experience, has met with cases bearing a resemblance to diphtheria in its local characters, for instance, in malignant scarlatina, in some cases of typhoid fever, and in idiopathic pharyngitis. But these affections, though sufficiently dangerous, differ from diphtheria in some striking characteristics, first, in seldom, if ever, invading the larynx and trachea, though the inflammation is in such close proximity, whereas, in diphtheria, this constitutes its principal danger; secondly, in the great debility and prostration of strength, and occasional muscular paralysis in diphtheria, which are out of all proportion to the local inflammation, showing they do not exist to each other in the relation of cause and effect.

This disease was first described by Bretoneau, of Tours. He describes it as first affecting the tonsils, then spreading along the pharynx, and ultimately reaching the larynx, where it produced a disease identical with croup, with which it was confounded. He makes no account of the fever which accompanies it, nor its peculiar tendencies, and appears to look on diphtheria as altogether a local affection, which, if once checked, the entire disease would be removed. Recent observations of the disease, in England, has led to a different conclusion, or perhaps the disease assumed different types, at the two periods referred to. In the latter period, the croupy state of the larynx appears to be by no means so frequently observed, and many cases have succumbed, without any local disease to account for the death of the patient, the result manifestly depending on

a specific poison of the nervous system. The extreme debility, which appears to be the essential character of the disease, is shown, even in very mild cases, by weakness of the limbs; a tottering gait; temporary loss of vision; tinnitus aurium; difficulty of deglutition, and a nasal tone of voice, remaining long after the local affection has passed away. These facts, and the conclusions necessarily resulting, are of great importance in directing our attention, as much to the extreme nervous debility of the patient, as to the local affection of the throat. The following cases, though few, will serve to illustrate the principal points referred to in the foregoing remarks.

In October, 1860, a child, about 12 years of age, arrived from Dublin, at a boarding school in the neighbourhood of this city. On the following day, she complained of slight soreness of the throat and some difficulty of swallowing. It was ascertained, that before leaving Dublin, two of her sisters were similarly affected, and they were stated to be dangerously ill. When I saw her, on the third day of her illness, both tonsils were covered with a coating of lymph, and the whole of the pharynx was of a purplish red colour. She swallowed drinks with pain, but could not swallow solid food. There was little fever, the pulse was somewhat quicker than natural, but there was scarcely any heat of skin, and there was a peculiar expression of languor in her features, which were of a pallid hue. Her voice was nasal, resembling that of a person who had suffered from ulceration of the palate. After relieving the bowels, with gentle aperient medicine, I gave decoction of bark, with dilute sulphuric acid, in small repeated doses; ordered a gargle, containing a solution of chloride of soda, and touched the tonsils twice a day with a solution of nitrate of silver, fifteen grains to the ounce. I directed her to be supported with chicken broth, wine, and arrow-root, new milk, and barley water. She had much difficulty in swallowing the two former in sufficient quantities, and had, in a great measure, to depend on milk for her support. After some days the tonsils became ulcerated, with a fetid smell from the breath. Part of the fluid which she attempted to swallow, flowed through her nostrils, and she had constant vomiting. This was arrested by the application of a blister, to the epigastrium, and a few drops of laudanum. She subsequently complained of severe pain in the region of the stomach, so violent, that I suspected the presence of an ulcer in that organ.

When ill about three weeks, the ulcers threw off their sloughy character, and were beginning to fill up with healthy granulations; she was also able to take liquid food with more regularity, still there was extreme weakness of the pulse, a coldness in the skin, and languor in the countenance, not easily explained by the local affection. Her intellect was at all times clear, and she talked freely with her attendants, though her utterance was not distinct, owing to the paralysed condition of the

muscles of the palate. While in this state, she sat up in bed to take a drink, fell back, as if in a faint, and expired. Although the peculiar inflammation of the throat was severer in this case, than in any other of diphtheria which I had met, still, her death was attributable, not to this cause, but to the poisoning of the nervous system, which, I consider, to be the essential character of the disease. Two or three days after the arrival of the child, whose case I have just related, three other children, belonging to her class, became attacked with nearly the same symptoms, namely, constriction in the throat, difficulty of swallowing, with slight fever. In all three, the tonsils were covered with the same coating of lymph, and the pharynx more or less inflamed, and of a dark red colour. In two of these young ladies, the disease ran a rapid course, to a favorable termination; the third was more tedious, still, the local affection was never so severe as an ordinary case of tonsillitis, or pharyngitis, but there was languor, debility, loss of appetite, and the peculiar voice to which I before referred. In about ten days from the commencement of the attack, this child had apparently recovered. Her throat was quite well, there was no difficulty in swallowing, still, the voice had not its natural tone, and there was great muscular debility in the whole body. When walking, she occasionally tottered in her gait, and felt a reeling in the head, which made her unwilling to leave her chair. She complained of motes flitting before her eyes, and sometimes lost her sight for several minutes, accompanied with a ringing in her ears of a most distressing kind. In this case, I examined the state of the urine, which contained no albumen. The child continued in this distressing state, nearly three months, although, during the entire time, her appetite was very good, and her general appearance showed no signs of delicacy. She finally recovered perfectly.

These cases clearly establish the contagious character of this disease, as all of these children, were, more or less, in contact with the young person first attacked, and no other case appeared subsequently in the school after their isolation. The last case I have referred to, shows in a special manner, the predominance of the nerve poisoning over the local symptons, as the nervous debility lasted long after every other symptom had disappeared. This should lead us to rely less on the statements of writers, who trust almost entirely to local applications, for the cure of this disease.

About the end of last October, I was called to see a child about five years old, labouring under symptoms nearly similar to those I have already described. During the first week, there was little to observe but the inflammation in the tonsils and pharynx, subsequently there was great debility, pallor of countenance, feeble pulse, and vomiting. At a later period, diarrhœa supervened, and there appeared but little hope of the child's recovery. However, by the constant use of stimulants, and

keeping her in the recumbent posture, she recovered, after a protracted convalescence; the last symptoms which disappeared, being the peculiar nasal voice.

TRANSACTIONS OF THE BELFAST CLINICAL AND PATHOLOGICAL SOCIETY.[a]

NINTH SESSION, 1861-62.

Case of Cataract.—Dr. Browne introduced a young girl, aged 14, from the country, labouring under cataract in both eyes.

He observed, that the case before the Society presented the usual appearance of congenital cataract, though the patient, up till two years ago, had enjoyed good sight; since that time the powers of vision had gradually declined, until now she could merely distinguish the outline of large objects, even when the pupils were fully dilated. No cause whatever could be assigned for the occurrence of the disease, as there had not been any injury or previous affection of the eyes. In his opinion it was the result of slow inflammation, and the consequent arrest of nutrition, just as, he believed, occurred in congenital cataract, either in utero or very soon after birth. Certainly it was very rare, he said, to see cataract occurring, as this had done, in a perfectly healthy young person, and where there had not been injury.

The operation he designed was that for breaking up and absorption—improperly called the operation for solution. He observed, that the needle—a very fine one—should be introduced through the cornea, and the capsule of the lens should be only slightly torn in the first operation, lest inflammation should be set up. In the future operation or operations the needle could be more freely used with comparative safety. Some weeks should intervene between the operations; indeed the needle should be only used afresh when absorption or the disintegration and disappearance of the cataract seemed at a stand still.—26*th October*, 1861.

Dr. Browne exhibited a patient labouring under traumatic cataract. The capsule had been wounded by a blow from a hackle-pin; and spontaneous cure was now going on by absorption.—2*nd November*, 1861.

Case of Enchondroma of Hand.—Dr. Browne presented the model of a hand, taken in plaster, and also the morbid specimen which he had recently amputated for enchondroma.

[a] These reports are supplied by Dr. Wm. M'Cormac and Dr. David Moore, Secretaries to the Society.

The patient was a woman, aged 64 years, from the country, near Belfast. She stated, that some 16 years since she had observed a small swelling close to the head of the metacarpal bone of great finger. This, she says, was entirely dispersed by treatment. Within the last two years, however, it had returned, and the swelling extended rapidly from that point to the rest of the hand, involving the metacarpal bones and the phalanges, with the exception of the distal phalanges of the thumb and little finger. The principal enlargement was on the back of the hand, where the tumour presented a somewhat unequal, glistening surface, the veins at some parts being tortuous, full, and enlarged. This tumour was elastic; and, at one or two places, there was a sensation of fluid beneath the touch. She came into hospital on the 4th; and on the 10th of September the hand was amputated three inches above the wrist joint, by the double flap of the integument and circular of the muscular structure. The stump, an excellent one, healed up kindly. Six weeks after the operation he saw the patient in excellent health. Indeed her health had not suffered much before, as she had not had very much pain—only neuralgic uneasiness arising from pressure upon the nerves.

On making a section of the tumour, and dissecting back the integuments, there was a very thin shell of soft bony structure, then cartilaginous structure containing gelatinous matter in cells. This portion very closely resembled boiled sago mixed with red wine. The entire normal structures of the entire hand had been destroyed. The metacarpal bones of the thumb and little finger were flattened, and changing into cartilage, the osseous structure having nearly disappeared.

Though the age of the patient, the rapidity of the growth, and resemblance of some parts of the mass to colloid cancer, might raise a doubt as to the true nature of the growth, he still thought the case one of enchondroma, rapidly degenerating—doubtless a rare affection, and not one of malignant disease.—*9th November*, 1861.

Fracture of Clavicle.—Professor Gordon exhibited a patient who had sustained a fracture of the clavicle at the junction of the outer with the two inner thirds. The outer fragment had undergone the usual displacement, inwards and downwards. He has maintained, for some time past, that in fracture of the clavicle the shoulder is elevated, instead of being depressed. In the treatment of this accident he does not push the shoulder upwards and backwards, as usually recommended, but depresses it. He places a very large pad over the lower part of the side of the thorax; along the arm and forearm an angular splint, well padded above, where it rests against the biceps muscle, and extending from the anterior border of the axilla to the hand. The lower part of arm and inner surface of elbow is then firmly bandaged to the large pad. The elbow joint being thus fixed, and rendered incapable of flexion by the splint, he next

elevates the forearm at the wrist, by a sling, which passed round the neck; and by so doing the shoulder is depressed and pushed outwards. In the present case this apparatus has succeeded admirably in maintaining accurate apposition of the fragments. It is simple in construction, easily applied, and not liable to become disarranged.—23*rd November*, 1861.

Professor Gordon introduced a patient whom he was treating for comminuted fracture of the clavicle.—23*rd November*, 1861.

The President then read his opening address, which had been deferred until this date owing to his unavoidable absence.[a]

Compound Comminuted Fracture of the Tibia and Fibula of the Right Leg.—Dr. Browne read the following case:—

George Mayers, aged 18 years, a strong healthy young man, was admitted to the General Hospital on the 18th of October; three hours before, the wheel of a baker's heavy cart had passed over the right leg, about four inches above the ankle. Both bones were broken. At the posterior part of the leg a wound existed about an inch in length; but the bones did not protrude from this, though the bruised tissues did. The limb was put, upon the outside, in a padded splint, and flexed at the knee, and the wound covered by water dressing. Erysipelatous inflammation, with considerable serous infiltration, soon set in, and extended to the knee; and in a week after admission the integuments on the front part, over which the cart-wheel had passed, as well as the posterior wound, had sloughed, exposing the broken ends of the tibia, denuded of periosteum for about three-fourths of an inch. Various contrivances were adopted to keep, or rather to bring, the fractured ends in apposition; but this could not be accomplished. At this time the constitutional disturbance became great, and the suppuration copious; still it was determined to give him a chance of saving the limb. Stimulants and tonics were freely exhibited; and, for some days, considerable improvement took place. However, the sores soon after assumed a very sloughy, in fact phagedenic appearance, the constitutional irritation increased, and there was great infiltration of the entire limb up to the groin, with pain along the course of the saphena and femoral veins, upon pressure. At that time the fractured parts of tibia were exposed for an inch above and below, and a large slough had taken place in the back part of the limb, behind the seat of fracture. Under these circumstances, though the issue seemed very doubtful, it was evident that amputation must be resorted to, to save life, if possible. The operation was accordingly performed by me, on the 14th instant, by the double flap of the integuments and circular

[a] Printed among the Original Communications in our present number.—See p. 281.

incision through the soft parts, the bones being cut through three inches below the tubercle of the tibia. Three vessels were tied, and the stump was put up four hours after, with straps of wet lint. Besides the great serous infiltration of the limb, to which reference has been made, the veins were found to be greatly inflamed and blocked up by a clot. He had had, moreover, on two occasions, severe rigors—one a week, and another three days, before the operation.

The opium and quinine, with six ounces of wine, beef tea, &c., which he had been taking, were ordered to be continued. On the 18th the wound was opened for the first time. The stump did not show the smallest sign of any healing by the first intention; but, otherwise, did not look unhealthy. The infiltration of the limb had greatly subsided; and the pain, on pressure along the veins, was not so great as before. Opiated mercurial ointment was directed to be rubbed along the course of the inflamed veins, and the stimulants, opium, &c., to be continued. On the sixth day after the operation, he had a sharp rigor, which caused some apprehension. On the eighth, pretty free suppuration of the stump had taken place, and there had not been any return of the rigor. On the tenth, the last ligature came way, and the patient seemed improving. On the twelfth day after the operation, however, he had, in the course of nine hours, three severe rigors, followed by profuse sweating. On the thirteenth day, an increased discharge of pus occurred; and there was not any recurrence of the alarming symptoms which caused the dread of pyemia; and he was discharged, four weeks after the operation, with a good stump, and with completely restored health, which had been so much shaken by the results of his unfortunate accident. On the whole the case is interesting, as showing that young persons will survive operations frequently, even when performed under the most unpromising conditions.

The bones of the parts at the seat of fracture were found to have been greatly comminuted, stripped of periosteum, and, in fact, in such a state as to have afforded no chance of repair.—30*th November*, 1861.

Case of Disease of Hand, requiring Amputation.—Dr. Browne showed the morbid parts, and gave the following statement of the case:—

Peter M'Caffrey, aged 54, previously of excellent health, and of temperate habits, was admitted into the hospital—first, in September, 1857, having had the middle finger of his left hand crushed between rollers, so much so that amputation of the part was performed by Dr. Browne, through the first phalanx. In five weeks he was then discharged, with the part quite healed up; and he remained well till the month of August of the present year, when he sustained a kick from a horse on the old cicatrix, which broke up the remaining portion of the first phalanx, and drove the splinters into the palm of the hand. He was admitted into

hospital, when Dr. Murney removed the fractured portions of the bone, and took away the former stump at the metacarpo-phalangeal articulation; the parts healed up, and he went out quite well at the end of a month. On the 12th of October he returned with the cicatrix completely opened, and presenting a most unhealthy phagedenic character, with disease of the metacarpal bone. Extensive sloughs, burrowing beneath the palmar fascia, took place, with great enlargement of the wound; in fact the gangrenous state progressed, despite all treatment, till hemorrhage took place which could not be controlled, and rapidly reduced the strength of the patient; this, combined with the excessive pain of the part, was quickly wearing the patient out, so that it seemed amputation was the only resource left, and for which the patient was most solicitous. Dr. Browne, therefore, amputated, a little above the wrist, on the 16th of November. The stump healed up quickly, and the patient regained his health and strength—the only retarding circumstance to his rapid convalescence having been suppuration of the glands in the axilla.—30*th November*, 1861.

Compound Comminuted Fracture; Amputation.—Dr. Browne exhibited a limb which he had to amputate the preceding week, in consequence of being completely smashed by a railway waggon which had passed over it. The operation was performed through the lower third of femur, by the double flap of integument, and circular incision of muscles—care being taken to make the anterior flap long. The stump promises to be an excellent one.—30*th November*, 1861.

Professor Gordon introduced a patient who had sustained an impacted fracture of the surgical neck of the humerus, together with fracture of the radius of the same limb. At the same meeting Professor Gordon showed an arm which he had found necessary to amputate for compound fracture at the elbow joint.—30*th November*, 1861.

Epulis.—Professor Gordon exhibited a specimen of fibrous epulis, and gave the following details:—

Ann Dyer, admitted into hospital November 9, 1861, aged 18, complexion florid, and her general health very good. About five years ago a small tumour appeared in the gum, opposite the second incisor tooth of the right side. At first this tumour grew very slowly, being at the end of three years scarcely half its present size. On admission into hospital the right side of lower jaw presents a firm oblong tumour, extending from the first incisor to the second molar tooth; it is almost an inch in length, and fully three-fourths of an inch in depth, rising upwards almost to the level of the upper margin of the crown of the canine tooth; it is not painful on pressure; in colour a little whiter than the gum; firm, and

slightly elastic; its surface perceptibly irregular from numerous small protuberances. Around its margin it overlaps closely the neighbouring gum and teeth; the first molar tooth is directed more inwards than that of the opposite; but this seems due rather to crowding of the teeth than to displacement by the tumour, as none of them are in the slightest degree loose. There is increased vascularity beneath the mucous membrane, at its reflection upon the lip, immediately below the tumour.

On attempting to remove the tumour with the scalpel osseous substance was encountered. The scalpel was, therefore, laid aside, and the cutting forceps applied, one blade above and the other below the tumour. The mass was thus easily and perfectly detached; and were I called upon to perform again a similar operation I would use the cutting forceps. The fang of the canine tooth was denuded almost to its point, and an osseous spicula, about one-eighth of an inch in diameter, divided. This spicula projected fully one-fourth of an inch into the tumour.

Although the alveolus between the canine and second incisor tooth seemed sound, yet, from the recognised tendency of such tumours to repullulate, the incisor and canine teeth were extracted, the intervening alveolus removed, and the surface touched, lightly, with potassa fusa. On examination of the tumour, after removal, we find it firm, slightly elastic, colour white; its surface perceptibly uneven, with a fibrous section, presenting a groove corresponding to the fang of the canine tooth; and that its point of attachment was much less than would have been supposed from the external examination. When cut into, a small cavity was exposed, filled with sebaceous-like matter, which, when examined by the microscope, is found to consist of plates of cholesterine, oil globules, granular matter, and a few epithelial scales. The tumour itself seems, on section, to be decidedly fibrous, yet the microscope shows it to belong rather to the fibroid than fibrous tumours. The several cavities containing sebaceous-like matter are, I think, the follicles of the gum distended by a secretion which has undergone degeneration. If we give to this fact its due weight I think it will lead us to infer that the tumour involves, and has its origin, simultaneously in the gum, periosteum, and alveolus.—30*th November*, 1861.

Disease of Femur.—Dr. Browne exhibited a patient labouring under disease of the left femur, and made the following statements regarding the case:—

The lad, now eight years of age, had, till four months since, excellent health, and is descended from healthy parents, not related by blood. At the time referred to he had a fall upon the hip, but which neither caused fracture nor luxation; indeed he continued to walk for a week after the fall without suffering pain, and without lameness. He then began to keep his bed, and suffered, for several weeks, great pain, with much swelling around the hip, and of the thigh also. The medical practitioner who

saw the case in the country, supposed that suppuration was about to take place. By degrees the pain subsided, and the swelling diminished; but then, for the first time, some five weeks' since, great shortening of the limb was observed to have ensued. When the boy was brought to the hospital, on the 4th instant, he (Dr. Browne) diagnosed spontaneous luxation at hip joint, with disease of the shaft of the femur. He said he was led to believe, from the history of the case, that acute hip-joint disease had resulted from the fall; that dislocation ensued, after some weeks of destructive inflammation; and that the disease of the shaft of femur had occurred about the same time.

The present condition of the patient, he said, is obvious. The femur is displaced upwards; the head and neck partially absorbed, are resting on, and nearly fixed to the dorsum of the ilium; the shortening amounting to fully three inches; the shaft of femur and soft parts are greatly enlarged, and the integuments have large veins ramifying extensively through them. The patient's health is good; and there is not the smallest pain on pressure, or on attempting motion of the hip. Still, even with these negative signs, he could only arrive at the conclusion that cerebriform disease of the femur is present, and that it would eventually prove fatal. The progress of the morbid growth had not lately been rapid; but the members of the society were well aware that in many of these cases the disease, for some time, seemed almost stationary, when all at once it advanced with great speed; and finally, having burst through the integuments, it soon destroyed the life of the patient, either by the constitutional irritation set up, or, in some instances, by the exhaustive drain of repeated hemorrhages.

He concluded by stating he would keep the patient in hospital for some time, would watch the progress of the disease narrowly, and would report the issue to the Society.—*7th December*, 1861.

Extroversion of Bladder, &c.—Dr. Browne introduced a lad of 14 years of age, who had congenital absence of the anterior walls of the lower part of abdomen and bladder; the back part of the bladder projected forward, and exhibited the mucous surface to the extent of about an inch and half square, with the ureters opening at the lower portion. Beneath this the rudiment of a penis appeared, the corpora cavernosa separated above, with a small opening in the sulcus, between the bladder and back of penis, seemingly the mouth of the common seminal ducts. The testicles were fully developed and enclosed in the scrotum, which approached to the normal condition beneath, but separated above, passing to each ascending ramus of the pubis, the two portions being united by a thin integument and membranous band. The pubes were separated at the symphysis, the interval being filled by strong ligamentous structure. There was no trace of a urethra, except what has been referred to as the openings of the ejaculatory ducts.—*7th December*, 1861.

Excision of the Tonsils.—DR. BROWNE introduced a young female, 18 years of age, from whom he had excised greatly enlarged tonsils, and exhibited the hypertrophied parts.

This young girl was of small growth, and not at all developed according to her age. She had suffered, for several years, from repeated attacks of inflammatory sore throat; and latterly the enlargement of the tonsils had become so great as to interfere materially with deglutition, speech, and breathing; and her general health had suffered also. The catamenia had never been properly established, and the mammæ were undeveloped. Dr. Browne regarded the operation of removal as established in such cases; and his experience of many cases was, that within one year after the excision of the hypertrophied tonsils, in young females, the system became fully developed, and the health quite re-established. He considered the operation quite safe, provided the surgeon took care not to cut too deep, or outwards; but having drawn the tonsils towards the mesial line, he carried the knife—probe-pointed—with its edge directed forwards, and its flat pressing against the arches of palate, completely through the enlarged mass. Very little hemorrhage had occurred in his practice, and he had never witnessed any unpleasant results.

With regard to the notion entertained by some authors that removal of the tonsils would interfere with the sexual reproductive powers, he said, in the first place, the tonsils never were, and *could not* be excised; it was only the *morbid growth* or *hypertrophied portion* that was removed; and in the second place, he contended that the removal of these morbid growths, instead of interfering with sexual development, actually had the very opposite effect. He concluded by saying that he strongly recommended the operation in all suitable cases—such, in fact, as the one he had introduced to the notice of the society.—*7th December*, 1861.

On the Restoration of Congenital Fissure affecting the Hard and Soft Palates, with a comparison of the resources individually offered by Prothesis and Autoplasty. A letter addressed to Professor Lawrence, by DOCTOR DEBOUT.

DEAR SIR,—It was not permitted your illustrious friend, M. Roux, to complete the work in which he proposed to make us acquainted with all he had seen or done of notable utility during his long professional career. But he had at least the consolation of terminating that portion in which he took the greatest interest on account of the large share he took in its elucidation, and which we have termed *restorative surgery*.

I shall not here examine whether our skilful surgeon has not omitted, in spite of the large space allotted to this subject, the consideration of

some of the affections naturally allied to it. He has himself taken care to obviate any reproach upon this account, by informing us that he writes more to demonstrate the really valuable assistance offered by those applications of restorative surgery which he has attempted with the most success, than to compile a complete treatise upon the subject.

And thus, in alluding to vesico-vaginal fistula, in the treatment of which restorative surgery has given such brilliant results in the hands of M. Jobert, M. Roux, not taking sufficiently into account the experience of others, says, "There are other restorations of too recent a date, and so lately instituted, as not to allow of their having been performed a sufficient number of times to enable us to pronounce upon their proper value, or to appreciate the especial worth of the different processes of which each is capable."

But we may justly criticise our illustrious master as to his voluntary silence regarding the value of such prothetic apparatus as industry, alone and unassisted, has succeeded in creating, to remedy deformities which even his skilful hand had failed to remove. Restorative surgery being, according to the definition of M. Roux himself, that part of our art especially destined to restore deformed organs, or those having suffered a loss of substance more or less considerable, to such a condition as will enable them to accomplish their natural functions; our art would often fail, to bring about this result, were we to omit the study of the real resources offered to us by prothesis.

For example, when the mutilation is confined simply to the soft parts, and the loss of substance is not too considerable, we are able, by ingenious processes, to render an increased mobility to the neighbouring parts and thus bring them into contact. It is no longer the same when the loss of substance affects the bony structures; here coaptation is no longer possible, and synthesis must give way to prothesis. Synthesis and prothesis are but portions of the same whole, and has not M. Roux, in consecrating an entire volume of his work to restorative surgery, and still confining himself to the consideration of synthesis alone, been guilty of a serious omission? It is a doubt which I beg your permission to express.

For some considerable time we have lost no opportunity of impressing upon surgeons the loss accruing to science, from their abandonment of all study of mechanical apparatus to instrument makers and the patients requiring them, and we wish to continue our task.

Operative surgery must at length learn to take into account the resources offered by prothesis. According as this latter becomes capable of repairing greater mutilations, the operative surgeon will become more enterprising. But a few years back would any surgeon have dreamt of removing the two superior maxillæ.

But at the same time that the operator may, in the present day, become more daring, owing to the abundant means now offered for filling up the

breaches that he makes for the safety of his patients, he ought also to learn to give place to prothesis, so soon as this latter has attained a sufficient degree of progress to accomplish the end in view.

Regarding prothetic apparatus, their trial is in all cases inoffensive, this is far from the case in respect to the applications of autoplasty, which, to say the least, in cases of non-success, leave the loss of substance greater than before.

Therefore, would it not be wiser to commence by a trial of these means, in all cases where their success is probable or even possible, instead of recurring as a last resource when we have already rendered its task more difficult? Such is the question which I desire to lay before you, as the person whose long experience has most fitted, to give us a solution.

I have chosen for my subject the restoration necessitated in the buccal cavity by the congenital fissure of the palate, implicating both hard and soft structures.

M. Roux, in his *Conservative Surgery*, has shown what resources are offered to the surgeon by operative interference. Allow me in turn to lay before you the real value of the means that prothesis affords us in the treatment of these affections.

I have neither the authority nor the talent of demonstration possessed by our professor; consequently I shall speak by facts, and leave them to plead the cause which I defend.

I have taken for example the most complicated of these cases, viz., a case in which the arrest of development affected the lip, the palatine arch, and the velum pendulum palati, constituting the deformity known with us as *gueule de loup*. I shall thus have occasion to indicate the share which in restorative surgery falls to the lot of synthesis and prothesis individually.

Operative surgery, by borrowing the required tissue from the directly adjoining parts (l'autoplastie par glissement), easily succeeds in closing the labial fissure, and in restoring the nose to its normal form. When this autoplastic operation is performed during the first months of existence, as is now most frequently the case, the influence of the simple restoration of the lip causes the gradual disappearance of the breach in the alveolar portion of the maxilla.

Such is not the case with the fissure of the bony palate; the palatine cleft remains unchanged. Nevertheless, were it possible to perform the operation of staphyloraphy at the same epoch as that for hare-lip, the union of the soft parts would exercise the same influence upon this fissure as upon that of the dental arch; the separated portions of the hard palate would so far approach each other as to leave but a slight longitudinal fissure which it would be easy to close.

But staphyloraphy is not an operation which can be performed upon very young subjects. In the words of M. Roux, "That it may be

performed with precision and employed with success, the patient must possess a strong will and a firm resolution, he must have the sentiment of his infirmity and a lively desire to get quit of it; he must be possessed of the courage necessary to affront the pain; and be capable of presiding over himself during the after treatment; he must also have sufficient force of character and patience to endure certain privations necessary to ensure success.

"Nothing can be commenced, pursued, or terminated, without his concurrence, without his will, without his participation. The degree of reason and the force of character possessed by a person of from 18 to 20 years of age is no more than is necessary; but it is sufficient; and we ought to profit by this the first favourable moment, in order to afford as soon as possible, to such as suffer from the errors of nature the benefits which art may be able to procure them. Waiting a few years later would only give perchance to our patients a greater resignation and a more firm courage, without placing them in other respects under more favourable circumstances." We have preferred giving the words of M. Roux, himself, in order that we might not be taxed with having, in the interest of our cause, retarded the epoch favourable to the intervention of our art; and exaggerated the moral qualities necessary in a patient who would undergo the operation of staphyloraphy with a prospect of success.

It is unnecessary to describe the operative processes of M. Roux, for the restoration of cleft palate, inasmuch as they have become classic, we shall simply indicate the results which he obtained in those cases where the cleft embraced both hard and soft structures—the only class of cases occupying our attention at present.

Of the 51 cases of complete cleft operated on by M. Roux, four underwent the operation a second time, and only one out of these four was cured by the second operation. He obtained occlusion of the cleft in rather more than half of the cases operated on, that is, in 26 of his patients.

Our skilful surgeon had just reason to be satisfied with such a result, from the fact, that the interval separating the two portions of the velum pendulum palati is generally much greater, than in those cases where the cleft affects only the latter organ. In fact, M. Roux, in most of his cases practised the separation of the soft from the hard palate.

In terminating his work, M. Roux makes the following remarks:—"In this class of cases we must not understand by success or favourable result the simple union of the two portions of the velum pendulum palati. After having obtained this result, which is ever incomplete, certain phenomena resulting from the simple efforts of nature are soon to be observed. There should be a spontaneous diminution of the distance between the two portions of the bony palate, after which, should there still exist an opening forming a communication between the mouth and nasal cavities, surgery may again be called on to interfere, but by other than the former means;

we may either attempt the definitive occlusion of the still existing aperture by means of palatoplasty or we may simply maintain it closed by means of an obturator."

We observe that M. Roux is at length obliged to call in the aid of prothesis; but what services did these mechanical apparatus render to his patients? He is completely silent upon this matter, although he must have had many opportunities of verifying the results of their employment.

Let us leave for the present this point of the question, in order to occupy ourselves exclusively with the 25 individuals to whom operative surgery was of no utility, those whom both surgeon and surgery abandoned to their sad fate. We shall mention the services which prothesis is able to render them, and, after having verified their reality, we shall be allowed to establish a comparison between the resources, so widely differing, of these separate portions of restorative surgery.

M. Roux is the last surgeon who could plead ignorance, as to the remarkable progress then realized by prothesis in the treatment of congenital cleft of the velum pendulum palati. In 1845, M. Stearns, an American surgeon, exhibited to him and to his colleagues at the Academy of Medicine, the services which a well conceived and adapted apparatus was capable of rendering to individuals affected with this vice of conformation.

The history of this surgeon is full of interest. Born with cleft palate, and arrived at the age of choosing his profession without having received any efficient aid from the numerous practitioners of his country, M. Stearns, fixed upon the study of medicine. With the old proverb, "Aide-toi, le ciel t'aidera," before him, he hoped by his own efforts to arrive with more certainty at a means of remedying his infirmity.

The physiological study of the vocal apparatus soon instructed him as to the role of the velum pendulum palati in the act of phonation, and M. Stearns, being gifted with great mechanical aptitude, was not slow in laying his hand upon the substance which was to permit him to realize his desire. Some attempts had already been made with this end in view. Nasmyth, dentist to her Majesty Queen Victoria, had constructed an obturator, the posterior portion of which was composed of gold plates, imbricated one upon another like the scales of a fish. This disposition gave mobility to his apparatus, but its weight was too great to allow of its being easily raised by the column of air as it escaped from the glottis in the act of phonation. M. Stearns had the happy idea to substitute gutta percha for the metal, and, by an ingenious combination of plates of this substance, he succeeded in constructing a light apparatus, which answered very well its destined purpose.

Unfortunately caoutchouc, in the natural state, does not possess sufficient resistance to the action of the agents, more or less destructive, of the buccal cavity—viz., animal heat, acid secretions, and alimentary deposits.

M. Stearns was consequently obliged to renew frequently his artificial palate; nevertheless, the greater difficulty was overcome, and the mechanical combination already arrived at, and it was not long before a valuable discovery came in to crown the efforts of our *confrérè*, by enabling him to bestow upon his artificial apparatus the wanting qualities. The vulcanization of caoutchouc allows it to remain in the mouth for months without alteration, and, at the same time, in no way interferes with its flexibility or lightness.

If the apparatus realized by M. Stearns was not appreciated by M. Roux, its importance did not escape the sagacity of Vidal de Cassis, inasmuch as we read in the edition of his work upon *External Pathology and Operative Surgery*, which followed the presentation of M. Stearns at the Academy:—"When the instrument is adapted, M. Stearns speaks absolutely as if the structures of his palate were in a state of perfect integrity, but upon its removal his voice assumes all the characters special to persons labouring under cleft palate, and his language becomes unintelligible." He further adds:—"If this instrument can be fixed so that there shall be no danger of the patient's swallowing it—if its attachment to the teeth does not loosen them—if, in reality, its presence in the buccal cavity be not irksome, and if its influence upon the voice and pronounciation be such as the experiment made upon himself, by this American surgeon, seems to prove, we might, I believe, dispense with perhaps the greater portion of the organic reparations at present practised upon the palate."

On his quitting this country, M. Stearns failed to leave with us here in France a model of his apparatus; consequently, the instruction that he came over to afford us as to his new application of prothesis was lost, and his discovery would still have been buried in the archives of science had it not been for a distinguished dentist whom we possess. M. Prêterre, upon settling amongst us, undertook to demonstrate all the reality of buccal restorations by prothesis. His success has earned for him the friendly esteem of our most eminent surgeons. In fact, M. Prêterre came forward with a generosity doing him infinite credit, in order to furnish us publicly, upon our hospital patients, the proofs of what this branch of art is capable; and there is at present scarcely an hospital surgeon who has not in his wards an example of the value of prothesis in buccal restorations. Here it is a superior maxilla, removed in totality—there an inferior maxilla, the anterior portion of which has been resected; elsewhere a cleft palate, now affecting the velum pendulum palati; now the bony palate; and now all the structures indiscriminately, which we find restored by the ingenious application of prothesis.

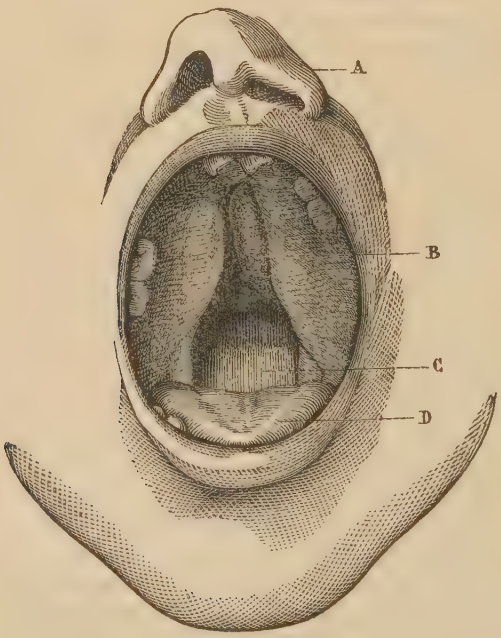
I have also taken advantage of the zeal of Monsieur Prêterre in the present instance. Having encountered an old patient of M. Roux, upon whom he had performed, unsuccessfully, the operation of staphyloraphy,

I entreated M. Prêterre to furnish me with the proof of the progress he had made, and of the improvements which the models created by M. Stearns had undergone at his hands. The following are the notes of the case :—

Hare Lip, complicated by Congenital Cleft, affecting both Hard and Soft Palate—Restoration of the Lip at the age of six weeks—Unsuccessful Attempt at Staphyloraphy at the Age of Thirty—Applications of Obturators with movable velum.

Lemaitre, *employé*, 54 years of age, born with a fissure affecting the left side of the upper lip. The labial fissure was accompanied by a large cleft of the hard and soft palate. His infirmity hindered him from taking the breast, and it was some time ere a suitable means of feeding him could be found. An ordinary tobacco-pipe was first employed; the bowl being filled with milk the thumb was placed upon it, and the stem laid upon the base of the tongue, when, by alternately lifting and replacing the thumb,

Fig. 1.



one was able to control its exit. At a later period a small bottle was employed in the following manner :—It was filled with milk, and a morsel of sponge the size of the little finger, and about two inches in length, was attached by means of a piece of linen to its orifice. With the aid of this

sucking bottle Lemaitre was reared, but not without difficulty, and consequently his mother eagerly accepted the operation immediately uponits being proposed. The restoration of the hare-lip was attempted with full success at the age of six weeks; but, the surgeon not having incised sufficiently the left nostril, Lemaitre was left with that side of his nose much flattened, as may be observed by the wood cut A, left nostril, which has remained flattened, owing to the insufficient division of the upper portion of the nasal fissure. In the anterior portion of the palatine fissure the vomer, B, is observed fixed to the left maxilla. The distance separating the two portions of the velum pendulum palati is much greater than usual, owing to the unsuccessful attempt of M. Roux at staphyloraphy. At the back of the mouth we may perceive a kind of muscular layer, C, projecting forwards, especially during the act of deglutition. It then seems as if the posterior pharyngeal wall (under the influence of the contraction of the pharyngo-staphylinus, or middle portion of the palato-pharyngeus) is projected forward as if to close the existing cleft.

Inhabiting the country, and occupied with field work, he felt less the inconveniences of his infirmity than he would have done had he dwelt in a city, and been engaged in an occupation requiring more frequent intercourse with his fellow-workmen. But still this man, who is very intelligent, acutely remarks, that the country people being less intellectual than townsfolk, he frequently had much difficulty in making himself understood by the former; and, on this account, he decided upon taking a situation of shop-boy at Havre; and it was in this place that M. Isidore Geoffroy Saint Hilaire, in the year 1847, proposed to bring him to Paris, in order that he might be operated on by one of our skilful surgeons. The mockeries of which he was from time to time the object, and especially the desire to be able to speak as distinctly as the rest of us, induced him eagerly to accept the friendly offer of the illustrious naturalist.

Lemaitre, on his arrival in Paris, was immediately confided to the care of M. Roux, and placed by him in his ward of St. Marthe, at the Hotel Dieu (No. 7). After the usual preparatory treatment, M. Roux performed the operation of staphyloraphy. Three sutures were applied, and the union was so rapidly accomplished that, at the expiration of 48 hours, M. Roux thought himself warranted in removing the sutures. That he was too hasty was proved a few hours later by the re-separation of the flaps, thus reproducing the fissure, and leaving the infirmity greater than before.

Immediately after the removal of the sutures a glass of wine was given to the patient, and Lemaitre, who up to this time had been perfectly free from fever, now began to suffer from quick pulse and other signs of an alteration of his health. Under these circumstances what influence must we attach to the moral effect of the disappointment in seeing all his hopes destroyed?

The fact is that, under the influence of these exciting causes, an erysipelas

of the scalp manifested itself upon the fourth day following the operation, and became so intense as to necessitate an incision behind the right ear. This attack of erysipelas was the principal cause of his not undergoing a second operation. Immediately upon his recovery he quited the Hotel Dieu.

Lemaitre, ashamed of returning to Havre still suffering from his infirmity, and having relations in Paris, preferred staying here, and it was not long ere he found employment. A few months since, coming by accident across this man, it occurred to me to make use of him in judging the value of prothesis in cases of cleft palate affecting simultaneously the hard and soft structures, and I conducted him to M. Prêterre. The wood-cut Fig. 1, indicates the extent of the lesion left for this dental surgeon to repair.

On the 1st of November, 1861, M. Prêterre adapted the first model, a copy of which we adjoin :—

Fig. 2.

Plaster Cast of the superior Maxilla of our Patient, and Model of the Obturator destined to close the enormous Fissure.

The plaster cast indicates the irregularity in the position of the teeth,

the incisors and canines bearing especial evidence of the congenital lesion. The fissure is long, large, and gaping, commencing at the union of the anterior third with the posterior two-thirds of the bony palate, and then dividing the velum pendulum palati, so as to suppress the uvula, and leave intact only the anterior pillars. Its limits are denoted in the plate above by the dotted lines.

The obturator is summarily composed as follows:—A metallic plate (3) is exactly moulded to all the inequalities of the remaining palate, and nicely adapted to the teeth, sending out prolongations in the dental interstices, in order to give fixity to the apparatus. Allow us here to mention, as a peculiarity, that in this case the plate of gold is cut out in such a manner (5) as to leave uncovered the gustatory papillæ, situated behind the incisors. But this disposition is not always, or even often, practicable, owing to its interference with the solidity and adherence of the apparatus. To the posterior border of the plate (3) is fixed another metallic rim (4), by means of three tenons turning on their axis, fixed upon the plate (3), and fitting into mortices of the plate (4). These tenons and mortices are indicated by the letter (E). It is between the plates (3) and (4) that the flexible velum of caoutchouc (1 and 2) is fixed. But the plate (4) serves another end besides the fixation of the artificial velum—it affords support to a whole system of springs, maintained in place by six screws, three on each side.

The caoutchouc, being moulded upon the soft parts, and to the edge of the fissure, presents different degrees of thickness, necessitating the employment of springs, differing in their force according as the caoutchouc differs in thickness. These springs may be enumerated as follows:—In the median line is observed a pendulum or needle-spring (C C), the lentil or weight of which may be made to approach or recede from the centre of oscillation by means of the screws (D D). The force of this spring is considerable—it is due to the action *of a tempered gold wire*, arranged in the form of a spiral (A A), and fixed to the upper surface of the plate (3). The energy of this spring may be further modified, either by loosening the spiral or by changing the position of the nut working upon the screw (B B); the mobility of this nut is itself regulated by a flat spring, twice turned upon its horizontal axis. Further outwards, on either side of the spring (C), we have a flat spring of tempered gold wire. These springs, attached to the plate (4) at the junction of the external with the middle third, are carried outwards and far backwards, to be fixed to the thinner portion of the caoutchouc; and, lastly, we have at each outer edge a spring of the same nature, but much shorter, and corresponding to the thicker portion of the caoutchouc.

This model had perfectly succeeded in a case of M. le docteur Cornag, of Neufchatel; and in the month which has now elapsed since this apparatus has been worn by Lemaitre, with the assistance of an hour's daily exercise,

superintended by M. Prêterre, he already speaks with surprising ease. This rapidity of result is not usual, and depends upon the great intelligence and tenacity of the patient.

Inasmuch as M. Prêterre shortly intends to read before the Academy of Medicine a paper upon the apparatus destined to remedy congenital cleft palate, and on the special education necessary, as part of the treatment in such cases, I shall not enter upon this subject, but content myself with the mere mention of the good results I have witnessed.

There is, however, an error which I should wish to point out—an error under which the greater number of medical men still labour—and that is, that so soon as the artificial palate shall be adapted, the subjects of congenital cleft palate should be able to speak immediately, and correctly. By promising such a result to their patients, they lead them into serious error, and cause much bitter mortification to the artists undertaking the prothesis of this deformity.

In order to understand this fact, we have merely to call to mind the altered conformation of the different parts of the vocal apparatus, and the rôle which they are suddenly called upon to perform.

The upper lip has, in point of fact, been restored—that is, the fissure which it presented no longer exists, but the labial tissues are far from being normally organised. The muscular tissues have suffered in their development; it is less abundant at the point of reunion; and this portion of the lip consequently possesses less mobility; moreover, there exists almost invariably at the inferior extremity of the cicatrix a notch more or less evident. From these modifications it happens that, whenever individuals who have been operated upon for hare-lip pronounce labial sounds—as eu, ou, &c., the under lip takes more than its share in the movement; and, besides, there is an effort to close the notch or slight remnant of the ancient fissure.

The conformation of the palate is not less vicious; the separation of the bony halves of this arch enlarges the buccal cavity, and diminishes, in a relative degree, the nasal fossæ; and it is evident that the application of an obturator can only close the communication between these cavities, and in no way remedy the modifications depending upon the change in their relative capacity; and it is this alteration which especially influences the tone of voice, which most frequently is, in these cases, snuffling, especially when the nostril remains flattened.

Lastly, we arrive at the rôle required of the artificial velum pendulum palati. The mechanical problem was difficult to resolve; for, although the plate of caoutchouc is as soft and flexible as the natural soft palate, it is unprovided with muscular action. Here it was that the artist had to call to his aid all his ingenuity: he had here to create a factitious force, which could raise the velum to the height necessary for the act of phonation. M. Prêterre, in the apparatus designed in the present paper,

has attained this object by, in the first place, giving the plate of caoutchouc a greater thickness at its base; and, secondly, by the application of a series of gold springs, which he has succeeded in rendering as flexible as steel.

When one reflects upon these modifications, as well organic as prothetic, and the influence they necessarily exert upon the phonic apparatus, one easily understands that the individuals suffering from this infirmity, although possessing the most complete apparatus, must still devote themselves to an especial study, and that the time necessary should be not less than from three to six months; the result is the more complete, as the lesion is less profound, and the individual possessed of greater perseverance.

Now that we have established by facts the reality of the resources of prothesis in the treatment of congenital cleft palate, it may seem that we have now only to trace the comparison between the advantages offered, on the one hand, by the new apparatus, and, on the other, by operative surgery.

But, previously, we must mention the distress occasioned by this vice of conformation, in order that it may be placed in the balance against the inconvenience of obturators, and the dangers of autoplasty. This view of the question is completely neglected in the classical works on the subject, notwithstanding the influence which this point ought to have in determining the surgeon to interfere, and the weight it should exert in the choice of means to be employed.

The distress occasioned by congenital cleft of the palate varies greatly at different periods of life. At the age favourable to surgical interference, the infirmity merely affects the organs of speech; of whatever extent the cleft may be, these individuals swallow with the same facility as if the internal conformation of the mouth was normal. This is by no means the case at birth.

Cleft palate, affecting all the structures, is one of the deformities most directly compromising an infant's existence, by the obstacle it offers to suckling [a] The silence maintained by authors on this subject, as well as upon the artifices to be employed in these cases, induces us to reproduce the first portion of a very interesting paper addressed by Eustache (de Beziers), in 1778, to the ancient Academy of Surgery. This paper would have remained unknown had not one of our most distinguished rising surgeons, M. Verneuil, undertaken to scrutinize the archives of this celebrated association, and to publish such fragments as might be useful to science. Although his publication was arranged with an especial view to the history of Staphyloraphy, our sagacious *confrérè* has taken care to

[a] In the 15th number of the Compendium de Chirurgie, which has appeared since the termination of this article, we find the following assertions:—"Congenital division of the velum pendulum palati does not compromise existence." . . . . . "One ought not, in these cases, to reckon upon the applications of prothesis."—(Page 754). These lines furnish us with further proof of the importance of our study.

point out the value of this communication regarding our present subject. See, here, the entire document. We must at present notice that Eustache employs an improper expression in speaking of the vice of conformation as *absence of the velum pendulum palati.* This error, as indicated by M. Verneuil, depends upon the smallness of this organ at birth, rendering the two portions but slightly visible. Having mentioned this error, we return to our citation.

Observations on Several Cases of Children Born with the Velum Pendulum Palati Absent : followed by an Essay upon a Means of Reuniting Recent Divisions of that Organ. By EUSTACHE DE BEZIERS.

" . . . Every one is aware that the soft palate is especially destined to moderate and direct the descent of food and drink, and to hinder them from ascending into the nasal cavities; that it further serves to direct the air expired ; that the act of swallowing depends on it, as well as the charm of the voice and the sonorous articulation of words. But if this fleshy partition is so essential to the adult, it is not less so to the new-born infant, to enable it to suck from its mother's breast the vital juice so admirably elaborated in its veins by Nature. The case of one of my own children, observed with all the exactitude that paternal tenderness could inspire, will furnish evident proof :—

" OBS. I.—*First Observation made upon one of my Children, Born with complete Absence of the Velum Pendulum Palati.*—In 1778 my wife was safely confined with a male child, which appeared, at first sight, well developed. Some little time after birth a little syrup was given him ; this he had scarcely tasted when he was suddenly seized with a convulsion, almost general. I attributed this accident to the entrance of a few drops of the liquid into the larynx. Recovered from this disastrous accident, he was put to the breast : he seized the nipple with avidity, quitted it, reseized it with uneasiness. Others were presented to him, which he seized, but always with the same agitation, and without success. I was too deeply interested in the conservation of this tender being not to occupy myself seriously with the discovery of the cause of such an effect. I examined the mouth, and at first sight discovered no anormality in its structure ; but as the accidents still persisted, I examined the buccal cavity a second time, and at length perceived at the entrance of the throat an extraordinary opening, which led me to the conclusion that my son was born without the velum pendulum palati.

" However, two days had already elapsed, and, *erat periculum in mora*, I therefore decided to administer a small spoonful of goat's milk : of this he swallowed some few drops, but the greater portion returned by the nostrils. I repeated this method, but with little success. On the fourth day of all these perplexities I imagined the use of a long and thick brush, which I made of linen. This I soaked in milk, and presented to him ; he seized

it, and was able to suck it. This little artifice having always succeeded it was employed for seven consecutive days. Emboldened by this success, I made a second brush, this time in the form of the nipple, and this artificial nipple enabled him to become accustomed by degrees to the natural one; and ten days afterwards he began to take the breast, but always with much difficulty and extreme slowness, and this caused him to waste away most pitifully.

"Within the space of five months he had ten wet nurses, and all avowed to me that this unfortunate infant, although applied to the breast for hours together, did not succeed in extracting half an ounce of milk in the whole day. Hence the almost total suppression of the urine and other excretions. Another nurse now presented herself, and animated by interest—that great and powerful motive—she engaged to take charge of this infant, in spite of the worry and embarrassments attending him. She had him under her charge during fourteen months; but, as she has since admitted, becoming wearied, and observing the daily wasting of this poor infant, she contrived in order to shorten her labour, without losing her salary, to feed him with a pap composed of equal parts of milk and water sweetened; and this method was secretly followed during thirteen of the fourteen months of her nursing. But this did not prevent her from applying him to the breast, in order to screen her conduct; but this application was always followed by convulsions and violent fits of coughing.

"However, he lived, and was weaned at the nineteenth month, when, to our great consolation, our infant got gradually stouter, his flesh became firmer, and his eyes expressed more animation, fluids were more rarely returned by the nose, and in the space of three weeks there was such a change in his health as I had not dared to expect.

"You easily understand my anxiety to discover the cause of such a happy change. I found it in the commencing development of the soft palate. This development daily increasing, things took their natural course, and my son was in a great measure delivered from the fiercest accidents which had so much alarmed me. From this epoch the deglutition of solids has always been accomplished with facility; but this has not been the case with fluids, especially in the case of water, the swallowing of which has always been laborious. The only liquids passing with less difficulty were red wine and muscat, their spirituous quality putting, without doubt, the organs of deglutition in action. We must further remark that the simple fact of inattention on the part of my son, either in eating or drinking, or the fact of the slightest obstacle touching the laryngeal orifice, produced, on the instant, a violent fit of coughing, which shook the whole of his muscular system. Lastly, we must mention that this tender infant, having without doubt learned the injurious results of the rapid descent of liquids, retained them in his mouth in order to swallow them insensibly, drop by drop, as it were, and this by a natural instinct more sure than the most

refined reasoning. In swallowing he had also the precaution of inclining the head forwards, as in the case of the Portuguese girl, related by M. de Jussieu.[a]

"From all of these facts, scrupulously observed, it seems evident that the velum pendulum palati is absolutely necessary, especially to new-born infants, and that it serves, at all ages, principally in the deglutition of liquids; and, secondly, that it is further of marvellous use in sonorous articulation, and in giving to the voice its agreeable qualities, as I have previously observed, and as the following fact will demonstrate:—

"My son, whose sad situation I have just described, remained as if dumb until the age of four years, or if he spoke, it was, in a manner, unintelligible. At this period he began to pronounce more distinctly, but his voice was always embarrassed, and wanting in flexibility. In order to overcome this inflexibility, I thought of causing him to tattle unceasingly, in order that the frequent vibration of the fibres of the glottis might render them supple and nimble, and thus remove the stiffness and harshness so painful to me in the voice of my son. This expedient perfectly succeeded: by means of this continual babbling, which I took care to animate, his organ became supple and pliable to the most varied inflexions: the air, which, by the constant movements of inspiration and expiration, quits the lungs or enters them by the opening of the glottis, caused an insensible vibration in the nasal fibres by the accelerated movement of an uninterrupted tattle."

Eustache continues:—

"A modern philosopher considers the organ of voice as a stringed instrument. The air escaping from the lungs is driven against the tendinous fibres of the glottis, causing them to give out sounds, the result of their vibration. Upon the flexibility of these fibres or vocal cords, upon their agility, and upon the precision of their vibrations, the voice depends for all its agreeable qualities—as the clearness of sound under ordinary circumstances, the softness of warbling in song, the delicacy of a modulation, and the brilliancy of a pearled cadence. But, in order to produce all these agreeable effects, there must be no deformity of the buccal cavity. You are aware, gentlemen, that such as are deprived of the soft palate, as well as those in whom this membranous partition is divided, have a disagreeable nasal tone of voice. This was the case with my son; for, although by the means employed as above described, he succeeded in pronouncing very distinctly, his voice was far from agreeable—he spoke through the nose, from the fact of the air, upon its escape from the glottis, not being directed by this partition into the posterior nares; on the contrary, the greater portion passes by the mouth, and the sounds formed not being reflected into the nasal cavities, the voice has no agreeable qualities.

[a] Memoires de l'Académie des Sciences, 1718.

"I pass over in silence many other phenomena observed upon my infant. M. Dodart, who has written an admirable paper upon the mechanism of the voice,[a] treats this matter in a manner which embellishes and fortifies my observations; but, inasmuch as the vain display of learning would add nothing to the verity of the facts I have just exposed, I shall content myself with referring my readers to his paper.

"I have frequently presented my son to many members of the Academy of Science and Belles-lettres of this city, and the different experiments above related were performed in their presence. It is now about three months since this dear child died from an attack of small pox. He would at present have attained his fifth year."

Subsequent Observations in support of the above.

"Obs. II.—M. Rey, *Avocat au Parlement*, called me in on the 12th of October, 1779, to see his daughter, aged twelve days. M. Foulquier, the surgeon generally attending the family, informed me that it had been impossible to suckle this child, and that its only nourishment had been goat's milk, administered in small spoonfuls. On examining the buccal cavity, we found that this child was deprived of the velum palati almost in the same manner as my son, but with this difference—that in the place of the pillars there was on each side a caruncula the size of a pea, and at the point corresponding to the articulation of the cuneiform apophysis of the occipital with the body of the sphenoïd, there existed a fleshy excrescence the size of a bean. I determined upon following the same course as in the case of my infant. This little one commenced to suck from the breast on the sixth day, but with great difficulty; the greater portion of the milk returned by the nose. She was sent out to a wet nurse in the country, but afterwards brought back to town by my advice, but all in vain. The same vice continuing to exist, the difficulty of suckling remained the same, the convulsions redoubled, extreme wasting resulted, and the little patient fell into a low fever. The impoverished state of the blood occasioned, in different parts of the body, tumours which suppurated, death at length closing the scene after five months of suffering.

"Obs. III.—On the 6th of June, 1781, Dr. Rouillet begged me to see the child of a M. Fabregues. The child was twenty days old, and all attempts to suckle it had been fruitless. On first sight it was perceived that the infant was the subject of hare-lip. The slightest drop of fluid—all of which, besides, returned in a great measure by the nose—excited violent convulsions. I attentively examined the interior of the mouth, and clearly perceived that the soft palate was wanting. The rest being perfect, I ordered the administration of pap, which was easily swallowed, but his stomach not being able to support this kind of food, he perished on the twenty-fifth day after birth.

[a] Académie des Sciences, Annee 1700.

"OBS. IV.—M. Cassan, merchant, of Pézénas, consulted me on the 14th of June, 1781, about his daughter, who, fifteen days old, had not been able to take the breast up to that time, the least liquid causing suffocation. The same means employed in my son's case were resorted to—she being deprived in the same manner of the velum pendulum palati—but all in vain. When applied to the breast the accidents were renewed, the liquids did not pass: she fell into the last degree of marasmus, and expired three months after birth.

"OBS. V.—On the 12th of September, 1781, I was called to an infant of Jacques Visset, blacksmith, at Sauvain, a village a league distant from Beziers. M. Valouzière, master of surgery, met me there. This child, only eight days old, had not been able to take the breast, and had suffered similar accidents to those related in the preceding cases. On examining the mouth, we became convinced of the absence of the soft palate. I advised the child to be fed with pap, which was easily swallowed; suckling was from time to time attempted, but without success, every attempt renewing the anxiety and distress. She died on the fortieth day after birth, wasted and extenuated.

"OBS. VI.—The following case was communicated to me by M. Cabanon, *maître en chirurgie â Capestan*, three leagues from Beziers. He was called, during the month of September, 1782, by André Espéron, to see a child four days old, whom they had been unable to suckle, and to whom it had not been possible to administer liquid of any kind.

"It resulted, from the examination, that this little patient had no soft palate. So long as she lived she was fed with pap; without being very stout, she seemed in tolerable health. Almost the entire village were witness of the fact that, whenever it was attempted to administer any liquid, the child was in danger of suffocation, and that the fluid was almost entirely ejected by the nostrils. She died suddenly at about the age of nine months, without its being possible to determine the cause of death.

"From all these observations I conclude that, whenever an unfortunate infant is born without the velum pendulum palati, that it is essentially necessary to feed it from the first with pap; but, especially, we must abstain from applying it to the breast. The difficulty experienced in the act of suction, the accidents which result, the convulsions which follow, with the anxiety tormenting him, are so many causes of irritation, producing marasmus, &c., and conducting at length to the tomb. If I had in every case followed this method, perhaps not one of these tender victims whose cases I have related above would have perished. I leave this reflection to your judgment."

The following remarks are those which M. Verneuil appended to the observations of Eustache:—

"Before producing the second part of this paper, where we shall find the operation of staphyloraphy indicated, and described in so remarkable a manner, I desire to dwell a short time upon the preceding facts, in order to show all their importance—abstraction being made of the question of operative surgery.

"The primitive malformation now occupying our attention was already known ere the end of last century, were it only by those surgeons who had observed *complicated* hare-lip. But we believe that, previous to Eustache, none had studied the simple lesion, as confined to the soft palate: it is certain that no one had, previous to this, so exactly described the consequences and prognostics. Our author, on the contrary, after having described and insisted upon the essential uses of the velum pendulum palati, enumerates very faithfully the accidents resulting from its vicious conformation, viz.:—the impossibility, and even dangers, of suckling; the imperfection of language from default in the pronunciation, &c. After which he indicates the proper means of preserving the precarious existence of the unhappy beings thus affected; and he demonstrates the efficacy of his councils by the example of his own son, who survived the first year of existence, only perhaps on account of the minute care taken to insure his alimentation.

"The series of facts produced by Eustache demonstrate the extreme gravity of congenital fissure of the soft palate—gravity partaken by this deformity with congenital fissure of all the structures, lip, hard and soft palate, and upon which modern authors themselves do not, perhaps, sufficiently insist. Upon a given number of infants born with an extensive fissure of the palatine arch, how many survive and how many succumb? This, exact statistical documents do not permit us to decide; but it is certain that a very large number perish at an early period. This is a fact pointed out by Dieffenbach and others, and which has been, on many occasions, confirmed in the discussions of the Société de Chirurgie. Further, it is evident that the prognostic, other things being equal, is more serious in cases of fissure of the velum palati than in cases of hare-lip, inasmuch as the latter may be remedied at a very early age, while the operation of staphyloraphy is almost unanimously postponed to the period of adolescence, and not without good reason.

"One will further remark in the case of the son of Eustache, the kind of vocal gymnastic instituted with success by the father; also, that secondary increase of the velum palati, being a kind of natural autoplasty by which the soft palate seemed, towards the twentieth month, to become much more developed posteriorly."

In a nosographical point of view this first portion of the papers by Eustache presents most incontestible interest; it may also be consulted with advantage by such surgeons as would write a useful paragraph *on*

the precautions necessary to assure the existence of infants affected with congenital fissure of the velum pendulum palati.

This hiatus, to which M. Verneuil so justly draws attention, has long since struck us, for we have, as the profession is aware, paid particular attention to the *therapeutique* of primitive vices of conformation. In all the observations of individuals affected with cleft palate which have fallen under our notice, we have carefully remarked the special attentions employed during their lactation, and to which they were indebted for their existence.

These artifices vary according to the extent of the congenital injury. When the solution of continuity affects merely the velum palati, as in the case of the son of Eustache, maternal suckling is still possible; but, in order to its facility, the infant must be applied to and retained at the breast in the vertical position. It was in this way that M. Stephenson (the American medical man upon whom M. Roux performed his first operation of staphyloraphy) was nursed. M. Roux took care to point out this happy inspiration of the mother of M. Stephenson in his first paper upon this subject, and he repeats that he has since had many occasions to recommend the same precaution, and that he has seen it succeed in every case where the injury was the same in extent. This expedient is of more value than that of Eustache, inasmuch as many of the infants which he caused to be fed with solid aliments succumbed, as seen by his observations. If his son survived, this result was owing to his continued application to the breast, in spite of the administration of pap, and especially to the incessant attentions with which he was surrounded.

When the cleft velum is accompanied by hare-lip, single or double, which is frequently the case, maternal suckling is no longer to be thought of, the infant not being able to seize the nipple. In these cases, as in that of Lemaitre, a sucking-bottle must be resorted to. The nipple of this instrument must also be longer than under ordinary circumstances; and again, its orifice must be narrow in order to allow a feeble flow of its contents; the act of deglutition being very slowly accomplished, there is thus no penetration of liquid into the air passages.

But, to return to our principal subject, which we may do without quitting the interesting observations furnished by the Surgeon of Beziers. It has been observed, that immediately on the child being weaned, Eustache no longer speaks of the obstacles to the alimentation of his infant resulting from the bifidity of his palate; the fact is, that the education of the parts has been promptly accomplished. In spite of their infirmity these little patients are not long before eating and drinking with the same facility as healthy subjects of the same age. One sees that upon the child being weaned, the arrest of development ceases to compromise its existence.

At this period a new series of trials arise—those relating to the phonic apparatus, and these are of longer duration. Although the first cries of the infant may be unmodified by the cleft palate, this is no longer the case with articulate sounds, so soon as the epoch arrives when the child begins to talk. The incomplete development of these parts renders speaking laborious, and infants affected with this vice of conformation must needs be incited; if they are abandoned to themselves they remain mute, or only utter sounds ill articulated. Without great patience and especial attentions, similar to the example furnished us by Eustache, we cannot arrive at the removal of this state of things, and the voice remains offensive and disagreeable.

This imperfection of speech exercises a serious influence upon the character of these infants, although they may make themselves understood by their parents, it is no longer the case when they address themselves to their little comrades, who refuse to allow them to join in their games. Again, at a later period, when the moment of commencing their education has arrived, the difficulty of making themselves understood disables them from profiting from the advantages of public instruction. Deprived of the stimulus of emulation and remaining at home, they study but little, work badly, and become unceasingly discouraged, and rarely arrive at the completion of their particular studies.

And still, by perseverance and a but slightly special study, commenced at an early age, this vice in their pronunciation might be so far corrected as to allow them to become acquainted with other than mere family life. It is not necessary that the amendment should be so very considerable, in order to suggest to them the idea of entering into society, it suffices that their conversation becomes comprehensible. Accustomed from their infancy to their mode of speech, they are only imperfectly conscious of their defective language, and so soon as their hearers manifest no difficulty or fatigue in conversing with them, they forget whatever there may be unusual in their manner of speech.

Reading aloud, declamation, and even singing, are the exercises most adapted to improve their pronunciation. Under the influence of this gymnastic, the voice attains a greater extent, becomes less veiled, less nasal, and articulation of sounds less defective. Here we observe something analagous to what has already taken place with regard to the deglutition of liquids. When one observes these extensive clefts of the palate, one is astonished to see the subjects of them drink as naturally and promptly as if the palate were in a state of perfect integrity.

Nature possesses an infinity of resources. Should the integrity of an organic apparatus become compromised, its functions are not, as a consequence, destroyed. At first, their exercise is more or less interfered with; but if, by a forced and constant gymnastic, the remaining parts are brought into action, we gradually see the inconveniencies which had

arisen disappear, and the apparatus, however incomplete it may be, recovers, in a great measure, its functions. "La fonction fait l'organe," says M. J. Guerin; we have a new proof of this dogma. Deglutition an act of organic life, incessantly reproducing itself, the education of the remains of the palate, is quickly accomplished, and even liquids are, in a short time, ingested without accident. It is different with regard to the concurrence of these parts in the act of phonation. This function is under the control of animal life, and exacts the concourse of the will, and of a will the more energetic according as the alteration in structure renders its accomplishment more laborious. However, it is but a difficulty which may be overcome by the prolonged and oft-repeated exercise of the injured organs.

Should the results leave us still something to desire, especially concerning the nasal tone of voice, we have the resources of prothetic apparatus.

In the example we have given of the excellent results of the employment of an obturator with artificial velum, the patient was fifty-four years of age, and still his education, as we have remarked, was more rapid than that of individuals much younger. The desire of succeeding, comes in aid of the injured organs. But this is not the only example which we have at present before us: M. Prêterre has shown us many cases of young people now under his treatment. We intend to publish, at a future period, the complete notes of these cases.

It is especially the young who will reap the greatest benefits from prothesis, and more peculiarly those already enjoying a large share of physical qualities. Nothing spoils so much the charm of beauty, or tarnishes its brilliancy, as the imperfection of language such as results from cleft palate.

The greatest obstacle to the common use of the obturator, with movable velum, is the cost. Allow us to remark that the price of such an apparatus is not at all exorbitant; and, further, that these prothetic aids are indispensable only to the easy classes of society. M. Roux will again furnish us with proof:—"One conceives that, to a man destined to manual labour, necessitating but slight intellectual intercourse with his fellow-men, such and such a tone of voice is of little importance, and that even the most defective manner of speaking rigorously suffices him. Of what use would a more perfect language be to him? Consequently, a man in this condition rarely makes any great effort to alleviate the results of this deformity; and it is even difficult to instil into him a desire to be delivered of his infirmity. I can easily count, so few is their number, the peasants and individuals belonging to the lowest classes of our city populations upon whom I have practised staphyloraphy; and, again, the greater number submitted to the operation rather from the persuasion which chance threw it in my power to exert on them, than from any prospect of great change in their manner of speaking. I have seen patients refuse,

at the last moment, to submit to the operation to which they had previously consented."

We have sufficiently enlarged upon the resources offered by prothesis. Let us now say a few words as to the succour held out by operative surgery. When the fissure affects simply the velum pendulum palati, the results of autoplasty are complete, and, in this case, superior to those of mechanical prothesis; but when the fissure extends to the hard palate—and it is these cases we have especially in view—it is no longer the same, The surgeon can only unite the two portions of the velum pendulum palati, so that there is still left the breach of the hard palate.[a] At the age when staphyloraphy may be attempted with success, there is no longer any hope of seeing the bony portions of the palate unite by a natural approximation; the patients will, in spite of the success of the autoplastic operation, be obliged to resort to some artificial means of closing the remaining aperture.[b]

Previous to the epoch when the artists devoting themselves to buccal restorations had succeeded in constructing an obturator with an artificial velum capable of supplying the place of the normal soft palate, operative surgery was in the right whilst seeking to establish the continuity of this membrane, inasmuch as the parts were thus placed in such a condition that prothesis could complete the work of restoration by the simple adaptation of a metallic plate. But, is it now the same? Evidently not. Since the individuals affected with complete cleft of the palate are compelled to wear an instrument, that this apparatus should be more or less complicated is a question of slight import. The palatine plate is the most embarrassing portion of the piece, from the many points of support which

[a] Since our principal object is to demonstrate the resources offered by mechanical apparatus, we must recall to mind an article which we published long since, "On the Employment of Maxillary Compressors in Cases of Hare-lip, complicated by congenital fissure of the palatine arch, and of the projection of median tubercule.—(Bulletin de Thérapeutique, t. xliv., p. 254 et 447.)—To the facts which we produce in support of the good effects of these apparatus, we must add the following, which was borrowed by M. Roux from the practice of Montain (de Lyon). We quote the words of M. Roux:—"This operation (the staphyloraphy) was scarcely created, and the first results I had obtained by it scarcely known, when M. Montain and myself had simultaneously the same idea—that of provoking in very young subjects the approximation of the two portions of the palatine arch in cases where the cleft affects this as well as the soft palate. Each conceived the idea of a double compression, applied on each side to the superior maxillæ. In one case he treated, and obtained this approximation of the two separate portions of the palate, the patient was but a few days old. He afterwards obtained complete adhesion, but without employing either scalpel or suture: he contented himself with cauterizing, at intervals, the edges of the remaining fissure, and thus obtained occlusion."

[b] It will be seen by reference to the able paper of Mr. M. H. Collis, in our 21st Vol., that Dr. Debout quite under estimates the value of autoplastic operations. In the Report on Surgery in our present number, p. 436, some further suggestions on the subject will be found.—[Ed.]

it has upon the teeth; whereas the pharynx and base of the tongue quickly become accustomed to the contact of the artificial velum; and, moreover, the trial of such an apparatus is inoffensive; and as it may be applied at a time of life when staphyloraphy is still impossible, nothing hinders its being tried. Should it be found wanting in efficiency, no time has been lost, and the patient can always claim the succour of autoplasty, and he will take his determination with a knowledge of the cause. Should the operation of staphyloraphy not succeed, he can again return to the use of his obturator with movable velum; all that would be necessary is the slight enlargement of the plate of caoutchouc, the fissure having been made larger, and a slight increase in the force of the spring supporting this plate, inasmuch as the muscular tissues pressing upon the artificial velum would have been weakened.

Besides, we can strengthen our opinion by that of an eminent surgeon. Since he has observed, as ourselves, the results furnished by the obturator with movable velum, M. Nelaton has completely renounced the practice of staphyloraphy in cases of cleft affecting the hard and soft palate, even in those cases where there exists no deformity of structure: as, for example, in cases where it has been necessary to sacrifice the palate in the extraction of a fibrous polypus from the nasal fossæ.

In the actual state of science we do not hesitate to declare that in cases of complete cleft palate—that is to say, in cases where the fissure affects both bony and soft structures—*the resources offered us by prothesis are greater than those of operative surgery.*

DEBOUT, D.M.S.,
Member of the Surgical Society, and President of the Medical Society of Paris.

Bulletin Général de Therapeutique.

BOOKS RECEIVED MAY, 1862.

1. Handbuch der Lehre von den Knochenbrüchen. Von Dr. E. Gurlt, Ester oder allgemeiner Theil. Berlin: Max Hirsch. 1862. 8vo, pp. 800.

2. The Climate of Algiers in reference to Chronic Affections of the Chest. By P. de Pietra Santa, M.D., &c. London: Baillière. 1862. 8vo, pp. 61.

3. Petersburger Medicinische Zeitschrift, I–V. Heft.

4. On the use of Anesthetics in Midwifery. By B. F. Barker, M.D., &c. From Transactions New York Academy of Medicine. Pamphlet. pp. 18.

5. Transactions of the Epidemiological Society of London. Vol. I., Part II. Davies. 1862. pp. 128.

6. On the Teething of Infants. By H. Hanks, L.R.C.P., Ed. London: Davies. 1862. Fcap. pp. 124.

7. A system of Surgery, Pathological, Diagnostic, Therapeutic, and Operative. By Samuel D. Gross, M.D., &c. 1227 engravings, second edition, 2 vols. Philadelphia: Blanchard and Lea. London: Trübner and Co. 1862. 8vo, pp. 1062 and 1134.

8. On Dropsy connected with Diseases of the Kidneys (Morbus Brightii), and on some other diseases of those Organs, associated with Albuminous and Purulent Urine. Illustrated with numerous drawings from the microscope. By W. R. Basham, M.D., &c. Second Edition. London: Churchill. 1862. 8vo, pp. 347.

9. A Treatise on the Physiological Anatomy of the Lungs. By J. N. Heale, M.D., &c. London: Churchill. 1862. 8vo, pp. 84.

10. Traite Pratique de Médecine Légale, Rédigé d'après des Observations personnelles. Par J. L. Casper. Traduit de L'Allemand. Par G. G. Baillière. Tomes II. Paris: Baillière. 1862. 8vo, pp. 439, 608.

11. Le Médecin des Villes et des Campagnes. Par le Docteur Munaret. 3ème Edition. Paris: Baillière. 1862. Fcap. 8vo, pp. 600.

12. The Royal London Ophthalmic Hospital Report, and Journal of Ophthalmic Medicine and Surgery. No. IV. Churchill.

13. Contributions to the knowledge of Osteo-Malacia. By Dr. C. C. T. Litzmann. Translated by Dr. J. M. Duncan. Edinburgh: Oliver and Boyd. 1862. 8vo, pp. 41.

14. Neuenahr: A new Spa on the Rhine. By James Miller, Professor of Surgery, Edinburgh, &c., &c. Edinburgh: Oliver and Boyd. 1861. 8vo, pp. 35.

15. Twenty-fourth Annual Report of the Suffolk Lunatic Asylum. 1862.

16. Illustrations of Puerperal Diseases. By Uvedale West, M.D., &c. London: Churchill. 1862. 8vo, pp. 84.

17. The Intellectual Observer. Review of Natural History, Microscopic Research, and Recreative Science. No. I. London: Groombridge and Sons. 1862. 8vo, pp. 84.

18. Public Health in relation to Air and Water. By W. T. Gairdiner, M.D., &c. Edinburgh: Edmonston and Douglas. 1862. Fcap. 8vo, pp. 369.

19. Homeopathy as practised in Manchester, contrasted with its alleged principles. By W. Roberts, M.D., &c. Manchester: Kelly. 1862. Pamphlet. pp. 84.

20. On the Therapeutic Law of Specific Remedies. By A. de Noe Walker, M.R.C.S.E., &c. London: Clayton. 1862. Pamphlet. pp. 16.

21. Sixth Annual Report of the Nottingham Asylum, for 1861.

22. An Effectual and Simple Remedy for Scarlet Fever and Measles. By Charles Witt, M.R.C.P., &c. Third Edition. London: Davies. 8vo, pp. 31.

23. A Clinical Treatise on Diseases of the Liver. By Dr. Frerichs. Vol. II. New Sydenham Society. 1861. 8vo, pp. 584.

24. Proceedings of the Pathological Society of Philadelphia. Vol. I. J. B. Lippincott and Co. 1860. 8vo, pp. 307.

25. Précis Iconographique des Maladies Vénériennes. Par M. A. Cullerier. 3ème livraison. Paris: Mequignon Marvis. 1861. Small 8vo, pp. 71.

26. Consumption, its early and remediable stages. By Edward Smith, M.D., &c. London: Walton and Maberley. 1862. Post 8vo, pp. 447.

27. Ten days in Athens, with Notes by the Way. By Dr. Corrigan, Physician in Ordinary to the Queen in Ireland, &c., &c. London: Longmans. 1862. Post 8vo, pp. 227.

28. The Pathology and Treatment of Phlegmasia Dolens, being the Lettsominian lectures on Midwifery. By F. W. Mackenzie, M.D., &c., London: Churchill. 1862. 8vo, pp. 131.

29. I. Syllabus of the Lectures on the Causes of Fevers, delivered during the Session of 1860–61. With an Etiological Nosology. II. An Etiological Nosology of the Diseases of the Skin. By Thomas

Laycock, M.D., &c. Edinburgh: Printed by Neill and Co. 1861–62. 8vo, pp. 19, 21.

30. The Health of the Royal Navy Considered. A Letter addressed to the Right Hon. Sir J. S. Pakington, Bart. By Gavin Milroy, M.D., &c. London: Hardwicke. 1862. 8vo, pp. 69.

31. The Placenta and Organic Nervous System, the Blood, the Oxygen, and the Animal Nervous System Physiologically examined. By J. O'Reilly, M.D., &c. New York: Wood. London: Churchill. 1861. 8vo, pp. 204.

32. Considerations Pratiques sur les Hernies Ombilicales Congénitales et leur Traitement. Pamphlet. (Reprint.) pp. 35.

33. Sur le Pessaire Grandcollot, Rapport fait a L'Académie Impériale de Médecine, Séance du 11 Janvier, 1862. Par M. Alph. Robert. Paris: Baillière. Pamphlet. (Reprint.) pp. 8.

34. Beiträge zur Chemischen Analyse durch Spectralbeobachtungen, Inaugural dissertation zur Erlangung der Doctorwürde, der hohen philosophischen Facultät der Hochshule zu Bern, überreicht von Rud. T. Simmler, von Zurich. 1861. pp. 59.

35. Programm der Berner Kantonsschule. 1861.

36. Verzeichniss der Vorlesungen welche an der Hochschule in Bern gehalten werden sollen. 1861–62.

37. Die Uroscopie am Krankenbette. Inaugural dissertation vorgelegt der hohen medizinischen Fakultät Bern, von Dr. Adolf Zeigler. Bern. 1861.

38. Behandlung des akuten Gelenkrheumatismus mit Veratrin. Inaugural dissertation von Dr. Med. A. Hänggi, Arzt in Thun. 1861.

39. Del Fedeecommesos Famigliare Dissertazione Inaugurale da Roggo Togni Stud. Juris. Bellinzona. 1861.

40. Ten Years of Operative Surgery in the Provinces. Being the Record of 875 Operations performed from 1850 to 1860. By A. Prichard, F.R.C.S. Part I., London: Richards. 1862. Post 8vo, pp. 174.

41. The Examination of the Chest, in a Series of Tables. By G. N. Edwards, M.D., &c. London: Churchill. 1862. Royal 8vo.

42. On Long, Short, and Weak Sight, and their Treatment by the Scientific Use of Spectacles. By J. S. Wells, M.D., &c. London: Churchill. 1862. Royal. 8vo, pp. 112.

43. Sixteenth Annual Report of the Devon Lunatic Asylum. 1861. 8vo, pp. 29.

44. Transactions of the Levant Quarantine Association of Constantinople. Vol. I. Part I.

45. Psychological Inquiries. The Second Part. Being a Series of Essays intended to illustrate some points in the Physical and Moral History of Man. By Sir Benjamin C. Brodie, Bart. London: Longmans. 1862. Fcap. pp. 247.

46. Essays on Scientific and other subjects contributed to the Edinburgh and Quarterly Reviews. By Sir H. Holland, Bart., M.D., &c. London: Longmans. 1862. 8vo, pp. 496.

47. Transactions of the London Obstetrical Society. Vol. III. 1861. London: Longmans. 8vo, pp. 480.

NOTICES TO CORRESPONDENTS.

The next number will contain a Retrospect of the Progress of Medicine during the Last Decade, prepared by R. D. Lyons, M.D., Professor of the Practice of Medicine in the Catholic University and Physician to Jervis Street Hospital. Retrospects on Psychological Medicine, Therapeutics and Materia Medica, and on Midwifery, Physiology, Ophthalmic Surgery, &c., &c., will follow.

We have been obliged to hold over several Reviews and Original Papers.

Books and Periodicals published in Northern Europe and the German States, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. TRUBNER and Co., *London," through their Correspondents* in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "DOCTOR HIGGINS, 212, *Rue Rivoli, Paris.*"

AMERICAN Books and Journals often come to hand with such an amount of Charges on them, that we cannot release them. It is requested that *all* communications from the United States shall be forwarded to MR. JOHN WILEY, *New York;* or Messrs BLANCHARD and LEA, *Philadelphia,* directed to us, to the care of Messrs. TRUBNER and Co., *London.*

INDEX

TO THE THIRTY-THIRD VOLUME.

ACHORION Schönleini, 401.
Acupressure needles, 443.
Air, measurement of cooling power of, 273.
Alopecia areata, 402.
Althaus, Dr., on carbonic acid in mineral waters, 75.
Amputations, 187—through condyles, 187—in the child, 188—in gangrene, 313.
Anchylosis of joints, 186, 470—complicated, of leg, 22, 485—of hand, 483, 486—of thigh, 487.
Anderson on parasitic affections of the skin, *Rev.*, 401.
Anesthesia, local, 444.
Aneurism of aorta, Mr. Macnamara on, 203—Dr. Bernard on, 231—Dr. Finn on, 236—treatment of, 426.
Ankle, resection of, 67, 185—amputation at, Syme's and Pirogoff's, 99, 188—caries of, 470.
Antidotes and specifics, 166.
Anus, diseases of, 100.
Aorta, murmurs in, 324—obstructive diseases of orifice, 327—obstructive stenosis, 330—patency, 331—aneurism of, 203, 231, 236.
Aphonia in tuberculosis, Mandl on, *Trans.*, 244.
Apparitions, De Boismont on, *Rev.*, 102.
Artery, popliteal ligature of, 22—effects of ligature on, 199—obstruction of, 340—pulmonary obstruction of, 349.
Arthritis, chronic rheumatic, 180.
Aspirations from the inner life, by H. M'Cormac, M.D., *Rev.*, 161.
Asylums, medical superintendence of, 259.

Bandages, 430, 443.
Banks, Dr., on general paralysis of the insane, 201—clinical reports by, 356.
Bannon, Dr., on contraction of left auriculo ventricular opening, 459.
Beatty, Dr., on hydatids of uterus, 445.
Belcher, Dr., Biographical sketch of Marquis of Dorchester, by, 238—on treatment of psora, 474.
Belfast Clinical and Pathological Society, transactions of, 483.
Bennett, Dr., on ligatured artery, 199.
Bernard, Dr., on aneurism of aorta, 231.
Bisulphites Polli, on use of, in zymotic diseases, *Rev.*, 367.
Bladder, irritable, from uterine disease, Dr. Churchill on, 196—extroversion of, 489.
Boismont, De B., on hallucinations, &c., *Rev.*, 102.
Bones, resection and removal of, 14, 442—formation of new, 98; and joints, diseases of, 177.
Bowman, introduction to practical chemistry, by, *Rev.*, 403.
Brain, concussion of, 430—abscess, 430.
Bread, nutritive value of, compared with milk, 414—gluten, 414.
Browne, Dr., on cataract, 483—on enchondroma, 483—on compound fracture of tibia and fibula, 485—amputation of hand, 487—of thigh, 487— on diseases of femur, 488—on extraversion of bladder, 489—on excision of tonsils, 490.
Burns, deformity from cicatrix, new operation for, 2, 6, 7,—441.
Butcher, Mr., reports in operative surgery by, 1.
Byrne, Dr. J. A., on rupture of uterus, and recovery from, 219.

Cancer, origin of, 167, 168—specimen of, 200.
Calculus, renal, 478—urethral in female 479.
Carbonic acid in mineral waters, 75.
Carpus, resection of, 182.
Cartilages, diseases of, 177.
Cataract, capsulo lenticular, 125, 483.

Catheter, Gely on new form of, *Rev.*, 398.
Cecum, malignant disease of, 296.
Cells, origin of, 164—cellular pathology, 164.
Chemistry, papers on, by Max. Simpson, *Rev.*, 144—manuals of, *Rev.*, 403—"young chemistry," 404—nomenclature of, 404.
Churchill, Dr., on reflex irritations from uterine disease, 193.
Cicatrix, deformity from, after burns, Mr. Butcher on, 2, 6, 7,—441.
Cirrhosis of liver, 206, 472.
Clavicle, fracture of, 484.
Clitoris, &c., tumours of, Dr. M'Clintock on, 209.
College of Physicians in Ireland, transactions of, 193.
Colles, Mr. on radical cure of hernia, 243.
Collis, M. H., retrospect of progress of Surgery, 163, 417—on cancer, 200.
Consumption, its early and remediable stages, Smith on, *Rev.*, 408—pretubercular stage, 409—expansion of the chest, 415—abscess opening in intercostal space, 455.
Cooke, on syphilis, gonorrhea, and gleet, *Rev.*, 135.
Cork Medical and Surgical Society, transactions of, 227, 470.
Corrigan, Dr., on treatment of hydrophobia in Salamis, 193—on medical superintendence of asylums, 261.
Crampton, Sir P., method of treating fracture of radius, 128—memoir of, 247.
Croup, tracheotomy in, 441.
Cullerier, on venereal diseases, *Rev.*, 406.
Cusack, Dr., memoir of, 255.
Cyclopia, 72.

Damp, cooling power of, 277.
Davies, Redfern, on radical cure of hernia, 60.
Debout, Dr., on prothesis and autoplasty in cleft palate, 490.
Deformity after burns, operations. 2, 6, 7,—441.
Degeneration of tissues, 165, 171, 340.
De Ricci, on some of the watering places and other health resorts of Switzerland, 87.
Development, doctrines of, 164.
Diabetes mellitus, Dr. Hughes on saccharine treatment of, 301—pathology of, 302—Dr. Moore on, 453.
Diet, daily scheme of, in consumption, 414.
Diphtheria, 480.
Disease, lectures on germs and vestiges, and prevention of, by Dobell, *Rev*, 149—a disordered condition, 165.
Dislocations, reduction by manipulation, 436.
Dissection, Holden's manual of, *Rev.*, 130.
Dobell, lectures on germs and vestiges of disease, and its prevention, *Rev.*, 149,
Dorchester, Marquis of, biographical sketch of, by Dr. Belcher, 238.
Doyle, Mr. V. S., on epistaxis in horses, 60.
"Drainage" in empyema, 356—tubes, 443.
Dreams, De Boismont, on, *Rev.*, 102.
Drunkards, reformatories for, *Rev.*, 374.
Duncan, Dr. J. F., on disease of heart, and apoplexy, 445—on embolus, 449.

Ear, cellular polypus of, Mr. Hildige on, 306.
Ecraseur, 443.
Embolus, 353, 445, 449.
Empyema, paracentesis and drainage in, 356 ; iodized injections in, 361.
Enchondroma of hand, 483.
Encysted tumours, Dr. Thorpe on, 81.
Epistaxis, Mr. Macnamara on, 28—varieties of, 29—Causes of, 29—from blood diseases, 31—from mental emotion, 32—from cardiac disease, 34—from splenic disease, 34—from renal disease, 35—from cerebral affections, 38—source of blood in, 40—symptoms of, 41—treatment of, 43—in horses, 60.
Epulis, 487.
Ethical writings of physicians, *Rev.*, 161.
Examinations, periodical, for preventing disease, Dobell on, *Rev.*, 149.
Excision of joints, 180.
Extasy, De Boismont on, *Rev.*, 102.
Extra-uterine fetation, 462.
Eyes, plurality of, 73.

Fatty degenerations, 171, 340.
Favus, 401.
Femur, disease of, 488—resection of, 14, 184—fracture of, 95, 433, 436, 450.
Fermentation, morbific, diseases depending on, and their treatment, Polli on, *Rev.*, 367.
Fetation extra-uterine, 462.
Finn, Dr., on aneurism of thoracic aorta, 236—on calculus in female urethra, 479.
Fistula, vesico vaginal, 438.
Foy, mémorial de therapeutique, *Rev.* 140.
Fractures, 430—of radius, 127—of skull, 281, 429—ununited, 96—compound, followed by gangrene, 311—starched bandage in, 430—of femur, 433, 437—of patella, 434—statistics of, 435—of clavicle, 484—of humerus, 487—compound of tibia and fibula, 485.
Franks on epistaxis, 30, 37.

Gangrene, acute, after compound fracture,

Dr. Wilmot on, 311—amputation in, 313—from arterial obstruction, 340.
Gardiner, Dr., on a difficult and complicated labour, 476.
Gely, on catheterism, *Rev.*, 398.
Germs and vestiges of disease, Dobell on, *Rev.*, 149.
Glaucoma, 124.
Gonorrhea and Gleet, W. Cooke on, *Rev.*, 135—and syphillis, aphorisms on, 172—treatment of, 176.
Gordon, professor, on fracture of radius, *Rev.*, 127—on fracture of clavicle, 484—Dr. Samuel, reports of rare cases, 340.
Gunshot wounds, 186.

Halahan, Dr., on mechanism of labour, 467.
Hallucinations, De Boismont on, *Rev.*, 102.
Hamilton, Mr., on osteosarcoma, 208—Dr. Edward on intra-capsular fracture of the femur, 450—on syphilitic laryngitis, 456.
Hare lip, 439.
Harrison, Dr., memoir of, 249.
Harrowgate waters, Dr. Osborne on, 198.
Haughton, Rev. S., on use of nicotine in tetanus, 429.
Hayden, Dr., on tubercular abcess opening through intercostal space, 445.
Head, injuries of, 289, 429—deformed, 460—congenital tumour, 464.
Health resorts and watering places of Switzerland, Dr. De Ricci on, 87.
Heart and vessels, commentaries on diseases of, by R. D. Lyons, 320—intermittent, without organic disease, 320—feeble, with hypochondriacal symptoms, 322—obstructive disease of, 445—disease of valves.
Hernia, reduction of, 191—radical cure, 60, 189, 191, 243—truss for, 190—strangulated, operations for, 192.
Herpes, 402.
Heyfelder, Dr. Oscar, on resection of astragalus, 67.
Hildige, Mr., on cellular polypus of ear, 306.
Hip joint, disease of, 179—resection of, 184—dislocation of, 436.
Holden's manual of dissection, *Rev.*, 130.
Horses liable to epistaxis, 60.
Hospital reports, by Dr. John Hughes, 296.
Houghton, Mr., on occlusion of the vagina, 240.
Hulke on ophthalmoscope, *Rev.*, 119.
Huxham on epistaxis, 31.
Hydatids of uterus, 445.
Hypodermic injections, 444.
Hydrocele, radical cure, 426.
Hydrophobia, treatment of in Salamis, 193.

Inflammation as causing fatty degeneration, 171—treatment of, 177.
In Memoriam, 245.
Inoculation, syphilitic, as a cure, 175—as a diagnostic, 176.
Insane, paralysis of, 201.

Joints, anchylosed, 186—excision, or resection of, 180—amputation through, 187—hip, disease of, 179—and bones, diseases of, 177—treatment of, 179.

Kidd, Dr., on epistaxis from renal disease, 36—on a congenital tumour of the head, 464.
Kidney, calculus in, 478.
Knee, resection of, 182.

Labia, &c., tumours of, Dr. M'Clintock, on, 209.
Labour, mechanism of, 467—difficult and complicated case of, 476.
Laryngitis, syphilitic, 456.
Leg, complicated amputation of, 22.
L'Estrange's truss, 190.
Life, doctrines of, 163, 165.
Ligamentum teres, action and vascular supply of, 134.
Ligature of popliteal artery, 22—effects of, on arteries, 199.
Liston, method of holding knife in lithotomy, 422.
Lithotomy, 420—rectangular, 420—Allarton's, 421—position of the knife, 422—statistics, 423—in the female, 423.
Liver, cirrhosis of, 206, 472—tuberculosis of, 207.
Lunatic Asylums, medical attendance of, 259.
Lyons, R. D., commentaries on diseases of heart and vessels, 320—on a double-bell stethoscope, 364.

M'Clintock, Dr., on tumours of labia, clitoris, and vagina, 209—on fibrous tumour of the uterus, 451.
M'Cormac, aspirations from the inner life, *Rev.*, 161.
Macnamara, Mr., on epistaxis, 28—on aneurism of aorta, 203.
MacSwiney, Dr., on cirrhosis of liver, 206—on fibrous tumour of uterus, 227—valvular disease of heart, 457.
Malformations and congenital diseases of organs of sight, 71.
Mandl, on aphonia in tuberculosis, *Trans.*, 244.
Marsh, Sir H., memoir of, 251.
Maxillary bones, resection of, 185.
Médecins, Moralistes, *Rev.*, 161.

Mémorial de Therapeutique, by Foy, *Rev.*, 140.
Mercury in syphilis, 166—fumigation, 175.
Microscopic observations, value and tendency of, 166.
Microsporon, Audouini, 402—Furfur, 402.
Milk, nutritive value of, 414.
Minchin, Dr., on a deformed cranium, 460.
Mineral waters, carbonic acid in, 75.
Monoculus, 72.
Montgomery, Dr., memoir of, 250.
Monsters, by excess of development, 465.
Moore, Dr., on tuberculosis, 207—on diabetes, 453.
Murney, Dr., on the statistics of the mortality of fracture of the skull, and effects of operation, 281.
Myocarditis, pure uncomplicated, 333.

Nares, plugging of, 53.
Nicotine in tetanus, 429.

Obstetric Society of Dublin, reports of, 209, 460.
O'Connor, Dr., on diphtheria, 480.
Odling, manual of chemistry by, *Rev.*, 403.
Opthalmia, gonorrheal, 177.
Opthalmoscope, Hulke on, *Rev.*, 119.
Optic nerve, malformation of, 71.
Osborne, Dr., on the use of Harrowgate waters, 198—on the employment of a heated thermometer for the measurement of the cooling power of the air on the human body, 273, 444.
Osteitis, 178.
Osteosarcoma, Mr. Hamilton on, 208.

Palate, cleft, 436—Debout on prothesis and autoplasty in, 490—Prêterre on artificial palate, 495—on the management of children born with, 502, 508.
Patella, fracture of, 434—Malgaigne, spikes for, 434.
Paracentesis thoracis, 356, 443.
Paralysis of Insane, Dr. Banks on, 201.
Parasitic affections of skin, 401.
Pathological Society, proceedings of, 199, 450.
Pathology, surgical, 163—cellular, Virchow's views, 164.
Peel, Sir Robert, deputation of visiting physicians of asylums to, 259.
Perineum, ruptured, 438.
Phthisis—see consumption.
Phymosis, operations for, 417.
Physicians, College of, transactions of the, 193, 444—ethical writings of, *Rev.*, 161.
Pirogoff's operation on ankle, 100, 188.
Placenta previa, its history and treatment, Read on, *Rev.*, 391.
Pneumonia, typhoid, cause of, 349—use of quinine in, 353.
Polli on diseases depending on morbific fermentation, and their treatment, *Rev.*, 369.
Polyoculi, 73.
Polypus, cellular of ear, 306—uterine, complicating labour, 476.
Popham, Dr., annual address by, 227—disease of ankle, 470.
Popliteal artery, ligature of, 22.
Porrigo, 401.
Porter, Dr., memoir of, 253.
Products, morbid, 167.
Prothesis, 490.
Prostate, abscess of, 424.
Psora, treatment of, 474.
Pulmonary artery, obstruction of, 349, 354.
Pulse, irregular and intermittent, 320.
Pus, origin of, 167, 170.
Pyemia, successfully treated, 25.

Quarantine, report on, *Rev.*, 112.

Radius, fracture of, 127, 435.
Rare cases, reports of, by Dr. S. Gordon, 340.
Read, on placenta previa, *Rev.*, 391.
Rectum and annus, diseases of, 100.
Reformatories for drunkards, *Rev.*, 374.
Resection and removal of bones, Mr. Butcher on, 14—Dr. Heyfelder on, 67.
Retina, malformations of, 71—floating. 126.
Retrospect of surgery, 163, 417.
Rheumatic arthritis, chronic, 180.
Rynd, Mr., memoir of, 254.

Scabies, 401.
Scapula, resection of, 185.
Sciatica, from uterine disease, Dr. Churchill on, 195, 444.
Serres-fines, 443.
Sight, malformations and congenital diseases of the organs of, 71.
Simpson, Dr., on chemistry, *Rev.*, 144.
Skin, parasitic affections of, *Rev.*, 401.
Skull, on the statistics of the mortality of fractures of, and effects of operation, 281—deformed, 460.
Smith on consumption, its early and remediable stage, *Rev.*, 408.
Smyly, Mr. J., on plugging nares, 153.
Soda, iodide of, in tertiary syphilis, 176.
Somnambulism, De Boismont on, *Rev.*, 102.
Specifics and antidotes, 165.
Starched bandage, 430.
Stethoscope, a double-bell, 364.

Styptics, 444.
Surgery, retrospect of progress of, during the last decade, 163, 417—pathology, 163—plastic, 463—orthopedic, 441—minor, 442—clinical, by Syme, *Rev.*, 95.
Swimming, real limits to power of, 278.
Switzerland, watering places and health resorts of, 87.
Syme, clinical surgery, *Rev.*, on fracture of thigh bone, 95—ununited fractures, 96—on amputation at ankle, 99—on diseases of rectum and anus, 100—on radical cure of hernia, 190.
Syphilis, relative influence of nature and art in cure of, W. Cooke on, *Rev.*, 135.
Syphilis and gonorrhea, aphorisms on, 172—variety of primary sores, 174—treatment, 175—by inoculation, 175—by mercurial fumigation, 175—of tertiary, 176.
Synovitis, 177.

Talipes, 442.
Tendons, reparative process in, 441.
Testis, cystic disease of, 424.
Tetanus, nicotine in, 429.
Therapeutique, mémorial de, *Rev.*, 140.
Thermometer, heated, for measuring the cooling power of the air, Dr. Osborne on, 273—animal heat, 276, 444.
Thorpe, Dr., on encysted tumours, 81.
Tibia, resection of, 19—compound fracture of, 485.
Tinea, 401.
Tissues, degeneration of, 165, 171.
Tonsils, excision of, 490—effect of excision on sexual development, 490.
Tourniquets, 443.
Tracheotomy, 441, 456.
Truss, by L'Estrange, 190.
Tubercle, origin of, 168, 170—of liver, 207.
Tuffnell, Mr., case of extra uterine fetation, 462.
Tumours, nature of, 169—of labia, clitoris, and vagina, 209—fibrous, of uterus, 227—encysted, 81—congenital, of head, 464.

Urethra, stricture of, 418—perineal section of, 419—splitting, (Holt's method) 420.
Uterine disease, Dr. Churchill on, reflex irritations from, 193.
Uterus, rupture of, and recovery, by Dr. J. A. Byrne, 219—fibrous tumour of, Dr. MacSwiney on, 227—Dr. M'Clintock on, 451.

Vagina, &c., tumours of, Dr. M'Clintock on, 209—occlusion of, by Mr. Houghton, 240—fistula, 438.
Veins, varicose operations for, 424.
Venereal diseases, modern pathology and treatment of, Watson on, *Rev.*, 135—Cullerier on, *Rev.*, 406.
Vestiges and germs of disease, Dobell on, *Rev.*, 149.
Virchow's cellular pathology, 164.
Visions, De Boismont on, *Rev.*, 102.
Vitreous body, malformation of, 71.

Waters, mineral, carbonic acid in, 75—of Harrowgate, 198.
Watering places of Switzerland, De Ricci on, 87.
Watson on modern pathology and treatment of venereal disease, *Rev.*, 135.
Wilde, W. R., on malformations and congenital diseases of organs of sight, 71.
Willett, Dr., on cirrhosis of liver, 472—on renal calculus, 478.
Wilmot, Dr., on acute gangrene from compound fracture of leg, 311.
Woillez, Madame, médicines moralistes, by, *Rev.*, 161.
Wützer's instrument for cure of hernia, modified by Davies, 65.

Zymotic diseases, Polli on use of bisulphites in, *Rev.*, 367.